

THE EVOLUTION OF THE G4 FUNCTION
AT DIVISION LEVEL:
1921-1945

A thesis presented to the Faculty of the U.S. Army
Command and General Staff College in partial
fulfillment of the requirements of the
degree

MASTER OF MILITARY ART AND SCIENCE

by
ALVIN C. ELLIS, Maj, TC

Fort Leavenworth, Kansas
1966

19990622 070

REPORT DOCUMENTATION PAGE			Form Approved OMB No. 074-0188	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503				
1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE 10 June 1966	3. REPORT TYPE AND DATES COVERED Master's Thesis August 1965 - June 1966		
4. TITLE AND SUBTITLE The Evolution Of The G4 Function At Division Level: 1921-1945		5. FUNDING NUMBERS		
6. AUTHOR(S) Ellis, Alvin C., Major, U.S. Army				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) U.S. Army Command and General Staff College 1 Reynolds Ave. Fort Leavenworth, KS 66027		8. PERFORMING ORGANIZATION REPORT NUMBER		
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)		10. SPONSORING / MONITORING AGENCY REPORT NUMBER		
11. SUPPLEMENTARY NOTES				
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; distribution is unlimited.			12b. DISTRIBUTION CODE A	
13. ABSTRACT (Maximum 200 Words) This thesis describes the evolution of the G4 (logistics) function at division level during the period 1921 through 1945. It begins with a brief description of the U.S. Army general staff and is followed by an examination of the staff organization and system of supply used by the divisions during World War I. These two areas provide the background material for subsequent discussion of the division G4. The evolution of the G4 function is described in terms of organization, duties and responsibilities, command and staff relationships, administrative procedures, and the system of supply. Five conclusions are reached: 1) The G4 section was organized as a result of lessons learned during World War I. 2) The duties of the G4 were increased steadily during the period 1921 to 1945. 3) The G4 section required additional personnel during WWII. 4) The G4 functioned as the chief supply planner and coordinating staff officer for the division. 5) The G4 generally followed published doctrine and the teachings of the Command and General Staff School.				
14. SUBJECT TERMS Logistics; Army divisions; command and control; divisional staff World War I; World War II			15. NUMBER OF PAGES 215	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT U	18. SECURITY CLASSIFICATION OF THIS PAGE U	19. SECURITY CLASSIFICATION OF ABSTRACT U	20. LIMITATION OF ABSTRACT U	

U.S. ARMY COMMAND AND GENERAL STAFF COLLEGE

(Thesis Approval Page)

Name of Candidate Alvin C. Ellis, Maj, TC

Title of Thesis The Evolution of the G4 Function at

Division Level: 1921-1945

Approved by:

Barton W Hayward, Research and Thesis Monitor

, Member, Graduate Faculty

, Member, Graduate Faculty

Date 10 June 1966

The opinions and conclusions expressed herein are those of the individual student author and do not necessarily represent the views of either the U.S. Army Command and General Staff College or any other governmental agency. (References to this study should include the foregoing statement.)

THE EVOLUTION OF THE G4 FUNCTION
AT DIVISION LEVEL:
1921-1945

An abstract for a thesis presented to the Faculty of
the U.S. Army Command and General Staff College in
partial fulfillment of the requirements of the
degree

MASTER OF MILITARY ART AND SCIENCE

by
ALVIN C. ELLIS, Maj, TC

Fort Leavenworth, Kansas
1966

(Abstract Approval Page)

Division Level: 1921-1945

The opinions and conclusions expressed herein are those of the individual student author and do not necessarily represent the views of either the U.S. Army Command and General Staff College or any other governmental agency. (References to this study should include the foregoing statement.)

ABSTRACT

This thesis describes the evolution of the G4 function at division level during the period 1921 through 1945. It begins with a brief description of the U.S. Army general staff and is followed by an examination of the staff organization and system of supply used by the divisions during World War I. These two areas provide the background material necessary for subsequent discussion of the division G4 during the periods 1921 through 1939 and 1940 through 1945.

Throughout each period the evolution of the G4 function is described in terms of organization, duties and responsibilities, command and staff relationships, administrative procedures, and the system of supply. This methodology allowed for a systematic treatment of the overall mission of the G4, the resources available to accomplish the mission, and the methods and techniques used in planning and operating combat service support within the division.

An examination of available material relevant to the study demonstrated the significant role of The Command and General Staff School (now the U.S. Army Command and General Staff College) in training commanders and general staff

officers since 1903.. The influence of the school was evident not only during World War I and World War II but throughout the interim war period.

The authorization of the division G4 in 1921 was a direct result of the recommendations of the Superior Board that was convened in 1919 by General Pershing to determine the lessons learned from World War I. The recommendations of this board resulted in the subsequent adoption of many other innovations and improvements in both staff organization and operational concepts throughout the Army.

During the period covered in this study, the G4 officer at division level was the last general staff officer to be authorized by tables of organization for the Army divisions. The principal duty of this officer and his section, during periods of both peace and war, was to plan, coordinate, and supervise logistical functions within the division.

The original organization of the G4 section in 1921 consisted of four officers and four enlisted men. Although the G4 general staff section at corps and army levels was organized along functional lines, the lack of sufficient personnel at division level precluded such a precise organizational structure. By 1937 and extending into the World War II period, the overall strength of the section had been

reduced to two officers and three enlisted men. This reduction was attributed to the gradual enlargement of technical service units within the division and a corresponding decline in the total administrative workload of the G4. Although the reduction of personnel assigned to the section did not affect peacetime operations, it did prove inadequate during World War II. Accordingly, additional personnel were assigned, and by 1945 the G4 section had been increased to four officers and four enlisted men.

The duties and responsibilities of the division G4 increased steadily during the period covered by the study. All of his responsibilities gradually became identified within the functional areas of supply, evacuation and hospitalization, transportation, services, and a miscellaneous category to include the preparation of estimates, orders, and other tasks not readily identified within a functional area. It was shown that during the war the G4, more than any other general staff officer, frequently issued instructions within his area of interest to both staff officers and troops. Moreover, the G4, as opposed to his doctrinal role of planning, supervising, and coordinating, was both a planner and an operator. Numerous examples were cited to substantiate this fact. The operation of traffic control headquarters and the initial operation of shore support

installations during amphibious operations are but two of many examples noted. A study of division G4 operations during World War II indicated general agreement between the teachings of The Command and General Staff School and the manner in which logistical plans and operations were accomplished in the field. The exceptions noted were based more on problems generated by unusual situations than on changes in basic doctrine and principles. In fact, the only ingredients mentioned as additional requirements to successfully discharge the G4 duties were common sense, imagination, ingenuity, and flexibility.

The relationship of the G4 to other general and special staff officers during the period of the study can be summed up in one word--coordination. The G4 coordinated with other general and special staff officers to accomplish his responsibilities as the principal logistical advisor to the division commander and as the coordinating officer for the planning and supervision of division level logistics. The introduction of the G4 to the general staff at division level did not alter the basic precepts of command and staff relationships. He was an assistant to the commander and performed those duties delegated to him by the commander.

Based on analysis of the material presented, five basic conclusions were reached. These conclusions are:

1. The G4 section was organized as a result of lessons learned during World War I.
2. The duties of the G4 were increased steadily during the period 1921 through 1945.
3. The G4 section required additional personnel on a permanent basis during World War II and further required an augmentation during the planning and execution of special operations.
4. The G4 functioned as the chief supply planner and coordinating staff officer for the division.
5. The G4 generally followed published doctrine and the teachings of The Command and General Staff School. Any deviations from published doctrine or college instruction were based on isolated expediencies to meet specific situations.

ACKNOWLEDGMENTS

The writer wishes to acknowledge indebtedness and appreciation to Major Barton M. Hayward, who, as the principal member of the writer's committee, provided constructive criticism, professional guidance, and helpful comments throughout the program. He, along with the other committee members--Lieutenant Colonels Thomas R. Dent and Frank G. Everett, Jr.--gave encouragement and patient understanding during the entire preparation of this study.

Acknowledgment also is given Mr. Anthony F. McGraw, Chief, Library Division, U.S. Army Command and General Staff College, for making available the total resources of the library, to include the assistance furnished by his staff in obtaining historical books and manuscripts. In this regard, a special commendation is extended to Miss Margaret M. Mutz and Mrs. Erna K. Basore for their time and assistance.

The efforts of Mrs. Evelyn F. Randolph, thesis typist, proved invaluable throughout the entire course of the study and are sincerely valued and appreciated.

Finally, the writer gratefully recognizes the unselfish encouragement of his wife and family, who steadfastly

supported the thesis effort throughout the long months of its preparation. It is sincerely hoped that the value of this effort will in time compensate for the neglect they endured.

A. C. E.

TABLE OF CONTENTS

	Page
THESIS APPROVAL PAGE	ii
ABSTRACT APPROVAL PAGE	iv
ABSTRACT	v
ACKNOWLEDGMENTS	x
LIST OF TABLES	xiv
LIST OF ILLUSTRATIONS	xv
 Chapter	
I. INTRODUCTION	1
Statement of Purpose	
Importance of the Study	
Methodology	
Organization of the Study	
II. BACKGROUND	7
Origin and Development of the Staff	
Early Development of U.S. Army General Staff	
Division Staff During World War I, 1914-1918	
Organization of System of Supply	
G4 Section Established at Division Level	
III. DIVISION G4 DURING THE PERIOD 1921-1939 . . .	37
Organization	
Command and Staff Relationships	
Duties and Responsibilities	
Administrative Procedures	
System of Supply	

IV. DIVISION G4 DURING THE PERIOD 1940-1945 . . .	73
Reorganization of Army Divisions	
First Test of Division G4 Concept: World War II, 1941-1945	
Organization of the division staff	
Duties and responsibilities	
Administrative procedures	
System of Supply	
Classes of supply	
Procurement and distribution of supplies	
Special Operations	
Amphibious operations	
Mountain operations	
River crossing operations	
Aerial resupply operations	
V. SUMMARY AND CONCLUSIONS	141
Summary	
Early development of U.S. Army General Staff	
Organization	
Duties and responsibilities	
Command and staff relationships	
System of supply	
Conclusions	
APPENDIX A: Extract of G4 Duties	155
APPENDIX B: G4 Administrative Orders Format	172
APPENDIX C: G4 Journal Format	178
APPENDIX D: Periodic Report Format	180
APPENDIX E: Duties of Division G4 in 1940	183
APPENDIX F: Standing Operating Procedure[s] (Triangular Division)	186
BIBLIOGRAPHY	194

LIST OF TABLES

Table	Page
1. Duties of the Technical Staff	27
2. Typical G4 Section Office Organization in 1921	47
3. Typical G4 Section Office Organization in 1937	48
4. Division G4 Office Organization	90
5. Recapitulation of G4 Functional Areas in 1940 .	100
6. G4 Duties and Responsibilities in 1923 and 1945	145

LIST OF ILLUSTRATIONS

Figure	Page
1. Division Staff Organization in 1917	16
2. Major Combat and Supply Elements of the Infantry Division in 1917	17
3. A.E.F. Division Staff Organization in 1918 . .	20
4. Infantry Division Major Combat and Support Elements in 1917	21
5. Division Channels between Commanding General and General Staff in 1919	29
6. Division Staff Organization in 1921	40
7. Infantry Division Organization in 1938	46
8. Infantry Division Headquarters in 1938	50
9. Infantry Division Trains in 1939	73
10. Major Combat and Supply Elements of the Infantry Division in 1943	80
11. Major Combat and Supply Elements of the Armored Division in 1942	81
12. Major Combat and Supply Elements of the Airborne Division in 1942	82
13. Organization of Division Staff in 1940	87
14. Echelonment of Division Headquarters in 1940 .	94
15. 102d Infantry Division Traffic Control Plan for Operation "Grenade," Effective 23 February 1945	113

CHAPTER I

INTRODUCTION

There are no principles of logistics which parallel and complement the ancient basic principles of war. Perhaps there should be. Perhaps later there will be. In the interim, however, it may be stated without fear that serious students of the military arts and sciences would not deny the importance of logistics in any contemplated operation. In recent times commanders at all echelons have become increasingly aware of the fundamental role of logistics. Their awareness prompted the authorization and organization of the Assistant Chief of Staff, G-4, Logistics (G4) in 1921 to coordinate this function at division level. This thesis concerns the evolution of the division G4 functions from 1921 through 1945.

The G4 was the most recent of the four general staff officers authorized for the Army divisions during the period 1921 through 1945. The intelligence section, G2, and the operations section, G3, were established prior to World War I; the personnel section, G1, was introduced within the division during the first world war.

The division was selected as the appropriate level to examine the G4 functions for two reasons. First, it is the basic organization of the combined arms and services and forms the foundation upon which corps and armies build their combat structure. Second, it is the lowest organizational echelon within the military field forces that is self-sufficient in the functional areas of combat, combat support, and combat service support operations.

Although the history of the division G4 represents a relatively short period, it is nonetheless a period which involved significant and sometimes abrupt changes in the duties, responsibilities, and staff relationships of this officer in areas both within and outside the division.

The information presented will provide a fuller appreciation of the application of logistics as well as a vehicle to analyze further and to solve immediate problems concerning the interrelationship of command and staff responsibilities for logistical planning and operations within the Army divisions.

Statement of Purpose

This study was made to examine the underlying causes which prompted the authorization and organization of the G4 section, to describe the evolution of the G4 functions, and

to analyze significant changes in the organization, operation, and command and staff relationships which influenced G4 activities.

The major objective of this study was to add to the sum total of knowledge in the area of division level logistics. This objective was achieved by citing the important contributions which the division G4 has made during the period covered and by analyzing the methods by which his responsibilities were discharged.

Importance of the Study

A comprehensive study of the evolution of the division G4 functions is important because:

1. It is the first attempt to set forth and amalgamate the first 24 years of the G4 function.
2. Understanding initial responsibilities and operations of division logistics provides a basis for applying previous rationale and criteria to present-day doctrine and procedures.
3. It provides the student of general staff history a suitable background and starting point to improve current doctrine concerning the responsibilities for detailed planning and for operating combat service support in the Army divisions.

Methodology

The evolution of the G4 functions was divided into two separate parts: first, the duties for each of the two periods under consideration and, second, the means and resources available to accomplish the duties.

The historical method was the approach used to present this thesis, and it constitutes the sole basis for the solution to the problem of preparing a history of the evolution of the G4 function at division level during the period 1921 through 1945.

Organization of the Study

The origin and development of the U.S. Army general staff are discussed in Chapter II. Since the World War I era had the most significant effect on the eventual establishment of the division G4 section, the duties and responsibilities of the staff and the organization of the system of supply are treated in detail.

Chapter III is a detailed treatment of the duties and responsibilities of the G4, the organization of his office, and the command and staff relationships within the division between 1921 and 1939. The administrative procedures that were adopted, or refined because of lessons learned during World War I, are listed. The system of

supply is again treated comprehensively since the responsibility for supply planning had been assigned as a G4 general staff function for the first time. The system of supply is analyzed in the areas of division trains, classes of supply, and procurement and distribution procedures.

The activities of the division G4 during World War II are described in Chapter IV, which covers the period 1940 through 1945. This chapter also contains an examination of changes in the G4 organization as a result of the transition from the "square" to the "triangular" division in 1940. More importantly, the effects of World War II are discussed in detail insofar as they affected the procedures and techniques used by the G4 to accomplish supply planning and coordination under wartime conditions. The introduction of the armored and airborne divisions are analyzed only to the extent that the G4 organization and operational procedures deviated from the standard infantry division. The chapter ends by highlighting the lessons learned from World War II as they pertained to division level logistical planning and operation.

Chapter V consists of a summary of the significant events and changes that occurred during the 24 years covered in the study. It includes, in an abbreviated summary, those factors which most affected the division G4 during the

period 1921 through 1945. The chapter ends by outlining the conclusions drawn from the study.

CHAPTER II

BACKGROUND

A history of the functions of the Assistant Chief of Staff, G-4, Logistics (G4) would be incomplete without an analysis of the causes which prompted the organization of the G4 section. This chapter begins by discussing, in general terms, the development and origin of the staff to provide a suitable background and common understanding of the purpose and reason for the staff to exist. The history of the development of the United States general staff is then accorded a comprehensive treatment by tracing the significant staff developments from the time of the American Revolutionary War to World War I.

The most significant reasons for organizing a G4 section at division level, however, were found in the examination of lessons learned during World War I. A detailed discussion of the division staff responsibilities is therefore included for the period 1914 through 1918.

Origin and Development of the Staff

In earlier times when armies were considerably

smaller, the general in command could work out, either personally or with the help of a few assistants, the detailed planning and could issue orders on forthcoming operations. This was due largely to the rigid rules governing tactical formations, maneuvering, and logistical requirements. Supply and administrative requirements under such conditions were relatively simple. Moreover, the commander could personally conduct the operation based on his observation of the battle and knowledge of the terrain, the enemy, and his own troop disposition. As armies gradually increased in size and became considerably more complex, the details of operating and administering such a unit could not be tied to any set of fixed rules. Consequently, the commander was required to rely on subordinates for the details of administration and supply in order to program the major portion of his efforts and time in directing the maneuvering of combat forces to defeat the enemy. These subordinates gradually developed into what is now regarded as the special staff.¹

The further growth of armies logically provided larger battlefields and a corresponding improvement and sophistication of weaponry and supply systems. For these

¹The Command and General Staff School, Command and Staff Principles (Tentative) (Fort Leavenworth, Kans.: The Command and General Staff School Press, 1937), p. 17.

reasons the combat elements of the unit relied more heavily on the specific tactical situation and were less capable of operating under any fixed rules. As this situation progressed, a distinct need arose for selected officers who could function as advisors on a full-time basis without the attendant responsibility of executing administrative or logistical operations. This is the reason the general staff was developed. Although they performed the basic function of advising the commander, these officers were quite naturally charged with the responsibility of supervising other staff officers in order to coordinate the administrative requirements and the existing tactical situation.²

The general staff was thus specifically organized to accomplish staff requirements a commander himself had performed previously. It was not a new agency which in any way duplicated the efforts of existing staff organizations.³

Early Development of U.S. Army General Staff

The earliest legal example of the general staff in the United States is found in the Army Legislation Act of 1796, which authorized the composition of the Army General

²Ibid., pp. 17-18.

³The General Service Schools, Command, Staff and Logistics (rev. ed.; Fort Leavenworth, Kans.: The General Service Schools Press, 1925), Vol. I, p. 26.

Staff to include a Quartermaster General, an Adjutant General, and a Paymaster General. The following year one space was added for a Judge Advocate officer. It is apparent that such a general staff was hardly adequate, even by the standards of the late eighteenth century. It was, however, a beginning.

The early nineteenth century provided many opportunities for advancement of the Army General Staff system, but unfortunately the military exponents of that generation, either through complacency or sluggishness, ignored them. The theory and the practice of the great general staff function in the Napoleonic armies, widely proclaimed in England and Russia, had little effect in America. Neither the fear of a war with Great Britain nor the war itself (1812) produced any improvement toward efficient staff functioning.⁴

The Mexican War (1846-1847) likewise contributed little in improving the working of the military staff. The military success of this operation is indeed attributed more to the leadership and discipline of officers and enlisted men than to any overall change in staff operation.⁵

⁴J. J. Hittle, Lt Col, USMC, The Military Staff: Its History and Development (rev. ed.; Harrisburg, Pa.: The Military Service Publishing Co., 1949), pp. 164-165.

⁵Ibid., p. 166.

Even during the war between the states (1861-1865), Army regulations of the era provided no major changes in staff organization although Generals G. B. McClellan and U. S. Grant both recognized the need for a reorientation of the staff to assist commanders in logistics, intelligence, and operations. The most significant accomplishment to evolve during the Civil War was the appointment of the Chief of Staff at field army level. This change in the U.S. Army staff system was in consonance with the more advanced staff system prevalent in Europe. The chief of staff concept, however, did not extend below field army level at that time. The principal staff officer within the division was still the Adjutant General although the division Quartermaster handled the bulk of all supply matters, to include clothing, food, and control of transportation.⁶

It was not until Elihu Root (1845-1937) became Secretary of War in 1899 that a firm foundation for a modern staff system was constructed. Under his direction a board convened on 19 February 1900 to consider the organization of an Army War College. On 27 November 1901 General Order Number 155, Headquarters, The War Department, established the General Service and Staff College, now the U.S. Army Command

⁶Ibid., pp. 169-170.

and General Staff College, to provide Army officers trained in the art and science of war. The same order also established the Army War College, now the National War College, for advanced professional study by Army officers. The second-mentioned institution is presently responsible for training officers of the joint Services and the State Department. The culmination of Root's efforts as Secretary of War, however, was achieved on 14 February 1903 with the passage of the Military Act that created the General Staff Corps.⁷

The functions of this newly activated branch were very broad and inclusive in nature and are perhaps best described by the following extract from the law which became effective on 15 August 1903:

The duties of the General Staff Corps shall be . . . to render professional aid and assistance to the Secretary of War and to general officers and other superior commanders, and to act as their agents in informing and coordinating.⁸

Unlike the Army Legislation Act of 1796, the passage of the 1903 law was significant since it provided spaces not only for the Chief of Staff but for 44 additional staff officers, ranging in rank from general to captain, who would

⁷ Ibid., pp. 175-184.

⁸ U.S., Statutes at Large, XXXII, Part 1, 830.

be authorized to devote their entire efforts to this staff function. Notwithstanding the fact that the 1903 law was a significant milestone in the evolution of the military staff in this country, there were still two major problems to be solved. First, from 1903 until the entry of America in World War I, few officers in the military knew exactly what the general staff was or, more importantly, what functions it was to perform. Second, there were no trained officers until the start of World War I. Oddly enough, some of the confusion resulted partly in the term "general staff" itself, which was borrowed from the German "Generalstab," meaning "general's staff." Apparently, in borrowing the word, the meaning or fundamental idea behind it was lost. To the German military mind the "Generalstab" was a highly specialized officer designated to assist the commander, whereas the conception in the United States was that the duties of the general staff officer were related to all military activities and were very general in nature.⁹

Although the law made allowances for 45 officers in the General Staff Corps, there were actually no officers who had received any instruction, training, or experience in

⁹The General Service Schools, Command, Staff and Logistics (Fort Leavenworth, Kans.: The General Service Schools Press, 1923), Vol. I, p. 28.

this special area. , Conversely, the German Army had allowed several years for training before establishing its "Great General Staff."¹⁰ The situation thus created is perhaps most appropriately described by the following excerpt:

We were confronted with the problem of establishing a general staff in a country where there were no trained general staff officers. It was a good deal like attempting to establish a college of physicians and surgeons in a country where there were no doctors.¹¹

The problem was corrected in 1906 by the addition of "command and staff" principles to the curriculum of The General Service and Staff College. The knowledge gained from this instruction greatly assisted General Pershing during the punitive expedition and again when he departed for Europe as the commander-in-chief of the American Expeditionary Forces. The general staff of the field forces and the War Department, however, had yet to face a major military crisis that would test the organization and concept of general staff operations. Consequently, one of General Pershing's chief concerns was the creation of a staff organization which would prove sound under conditions of total war.¹²

¹⁰D. H. Connolly, "What and Why Is a General Staff," The Military Engineer, XIII, No. 69 (May-June 1921), 223.

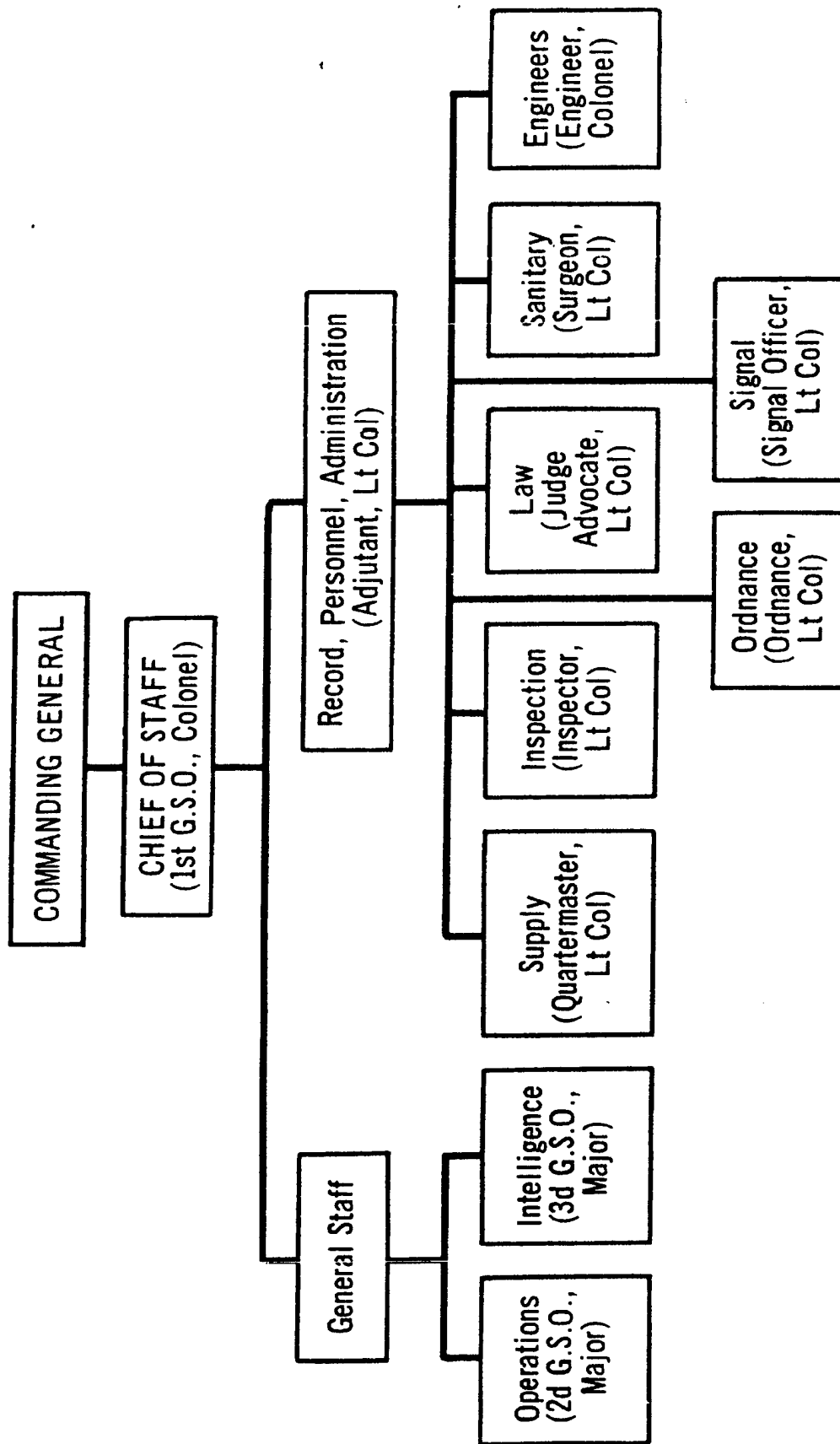
¹¹The General Service Schools (1923), p. 32.

¹²Hittle, pp. 187-188.

Division Staff During World War I, 1914-1918

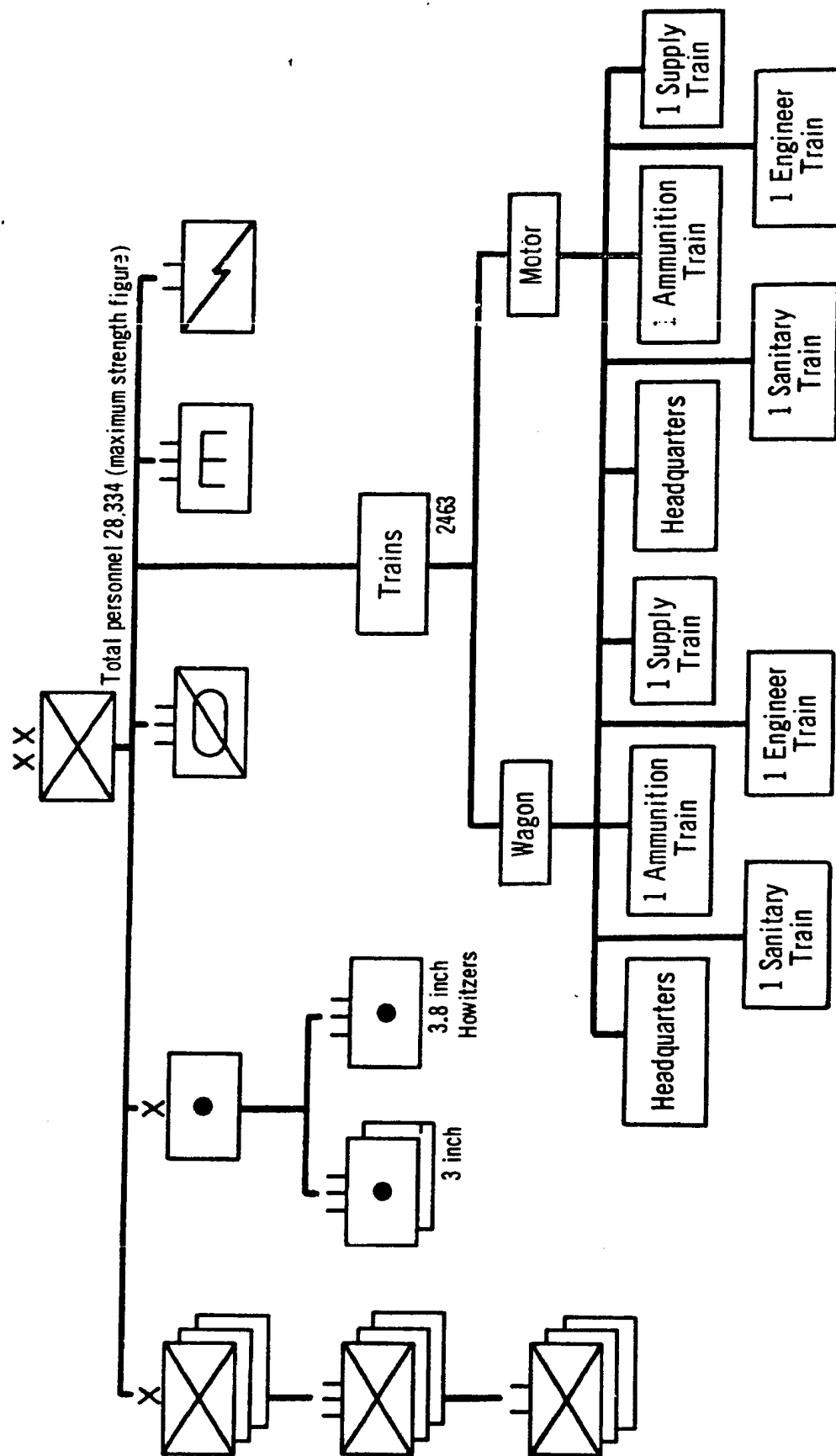
Organization.--The general organization of the staff at division and higher levels of command in 1917 is shown in Figure 1. Similarly, the organization of the infantry division for which this staff was organized is shown in Figure 2. Basically, the staff organization comprised the Chief of Staff, the General Staff, and the technical and administrative staff which were organized under the Adjutant. It is interesting to note that the subject of staff services and responsibilities had never been specified in any single publication prior to 1917. The staff manual published in that year attempted to point out the rationale for organizing the staff as depicted in Figure 1 and for assigning duties and responsibilities associated with each major division.

The purpose of the General Staff with troops was primarily twofold: first, to supervise training and to prepare operational plans; second, to collect, collate, and analyze information upon which plans were based. The technical and administrative staff was organized on a functional basis under the direction of an Adjutant to free the General Staff and the Chief of Staff from administrative and routine matters. The echelonment of technical and administrative services under an Adjutant was a direct result of the French



Sources: U.S., War Department, Staff Manual: United States Army (Washington: U.S. Government Printing Office, 1917), appendix A; and U.S., War Department, Table of Organization, Series A (Washington: U.S. Government Printing Office, 1918), Part I, Table 2.

Fig. 1.--Division staff organization in 1917



Source: U.S., War Department, Tables of Organization: United States Army (Washington: U.S. Government Printing Office, 1917), Tables 2, 6, 16, 20, 23, and 24.

Fig. 2.--Major combat and supply elements of the infantry division in 1917

and British staff practice at the time combined with the traditional American custom of consolidating and supervising administrative functions by an Adjutant.¹³ The American Expeditionary Forces (A.E.F.) used the division staff organization presented in Figure 1, page 16, until 16 February 1918, at which time General Pershing issued General Order No. 31 to establish at division level the Assistant Chief of Staff, G1, who was head of the Coordinating (General) Staff for all technical services. The chiefs of the technical services became assistants to the Assistant Chief of Staff, G1.¹⁴ The technical services then in the infantry division of the A.E.F. consisted of the Quartermaster, Medical Department, Ordnance Department, Signal Corps, and Veterinary Service.¹⁵ Correspondingly, the administrative staff was composed of the Adjutant, Inspector, Chaplain, and Judge

¹³U.S., War Department, Staff Manual: United States Army (Washington: U.S. Government Printing Office, 1917), pp. 5-6.

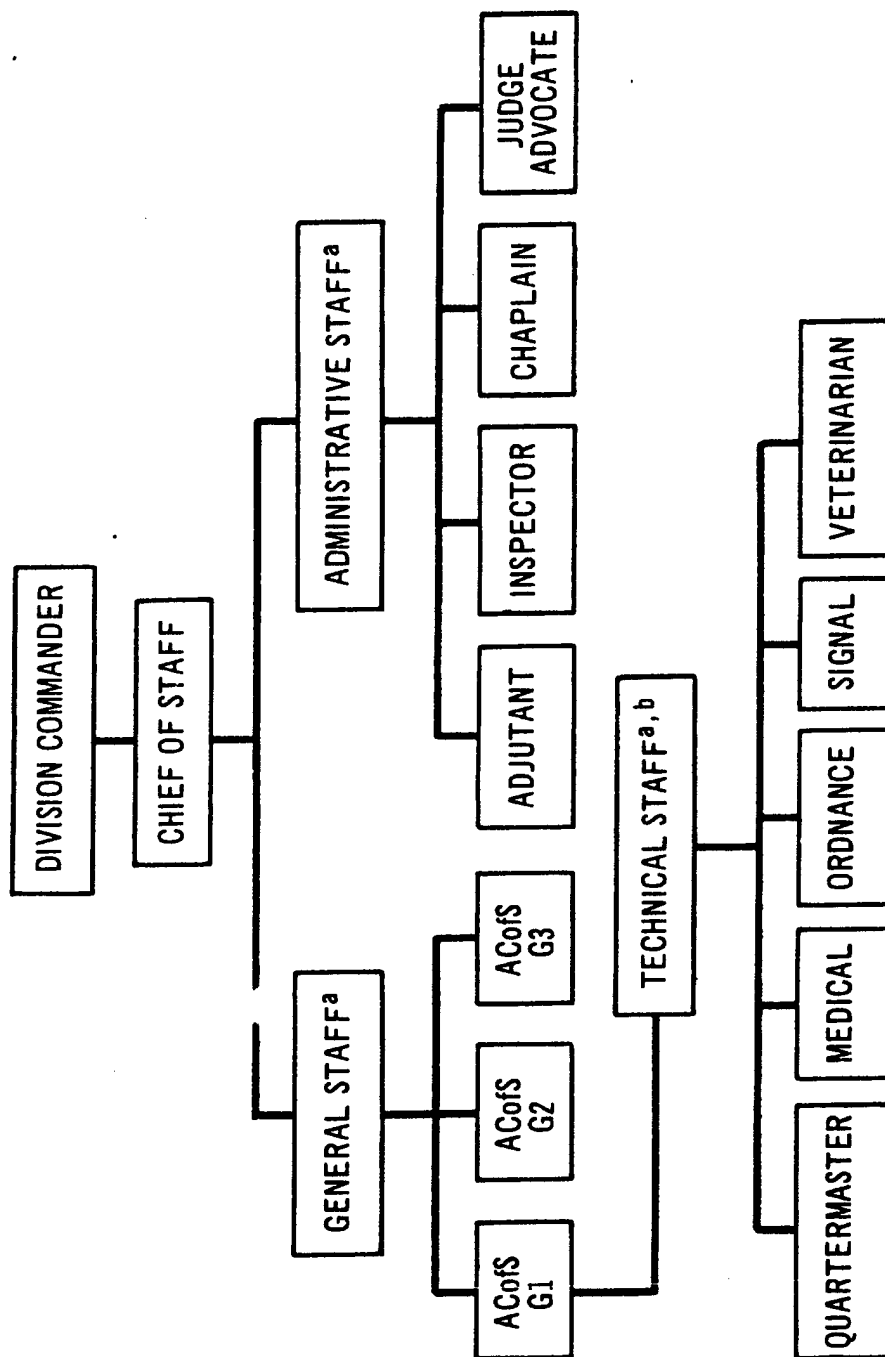
¹⁴The Quartermaster Corps School, Operations of the Quartermaster Corps, U.S. Army, During the World War ("Notes on Army, Corps and Division Quartermaster Activities in the American Expeditionary Forces--France," Monograph No. 9; Philadelphia: Schuylkill Arsenal, 1929), p. 45.

¹⁵U.S., Department of the Army, Historical Division, United States Army in the World War, 1917-1919, Vol. I: Organization of the American Expeditionary Forces (Washington: U.S. Government Printing Office, 1948), Table 2, p. 342.

Advocate Sections. . The reorganization in 1918 of the A.E.F. division is represented in Figure 3.

Also of significant note is a complete reorganization of the division that had been accomplished on 3 May 1917. This reorganization was prompted by the recommendations of General Pershing, immediately approved by the War Department, to substantially reduce the size of the American division. The total strength of the division was reduced from 28,334 to 19,445 personnel, approximately 65 percent of its original size. Included in the total reduction were the logistical support elements from 2,463 to 2,322 spaces. Figure 4 depicts the major combat and support elements of the division authorized by General Order No. 14, Headquarters, A.E.F., 15 July 1917.

It is also apparent that both the technical and general staffs at division level underwent many changes in a relatively short span of time. Principally, the G1 Assistant Chief of Staff was established to coordinate the functions of the technical services which theretofore had been regulated through the division Adjutant to the Chief of Staff. The services within the division were generally divided into two main areas: the administrative staff and the technical staff. The Judge Advocate, Inspector, and Chaplain were placed on the same organization plane as the

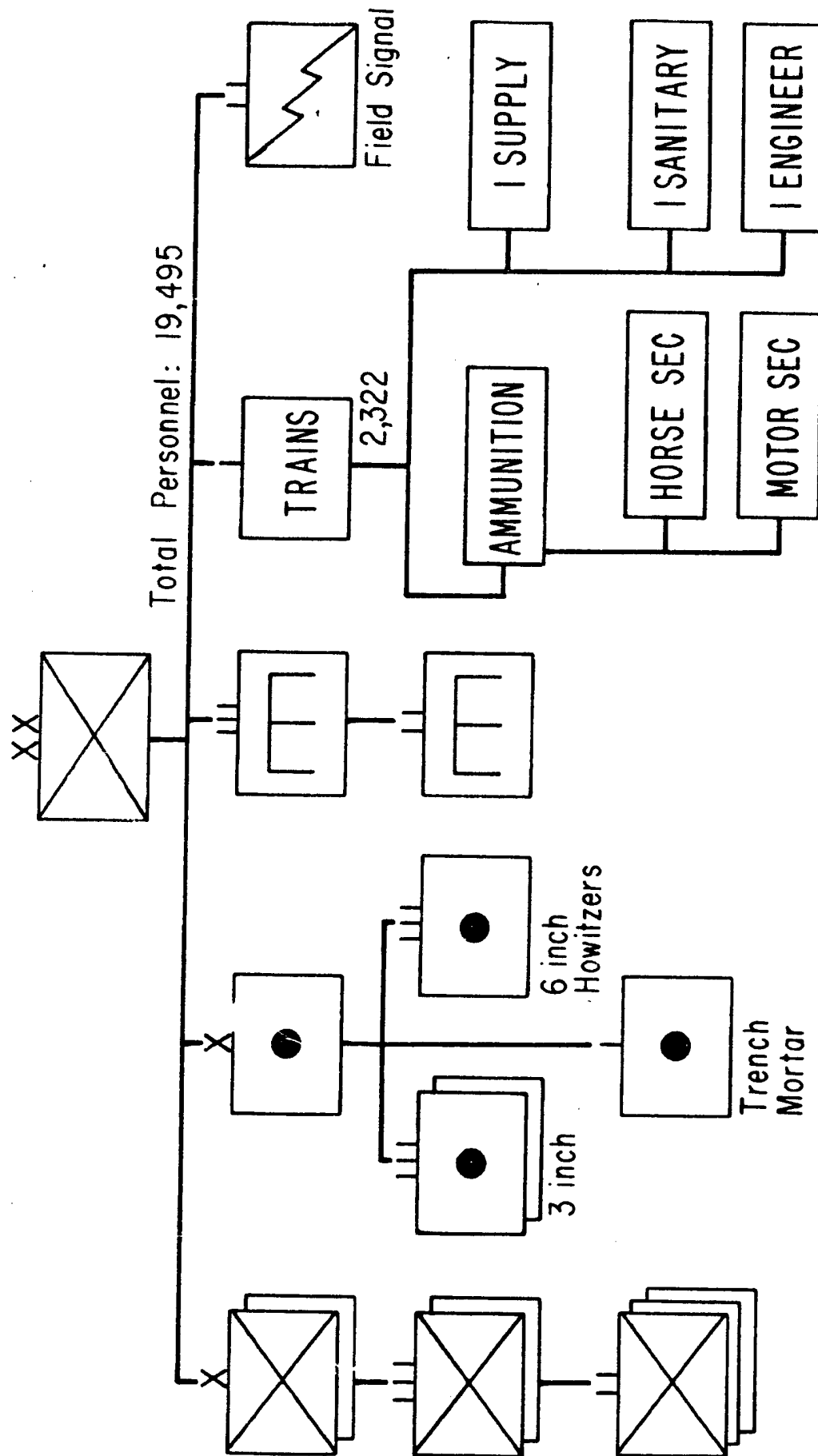


^aEach staff officer a lieutenant colonel.

^bEngineer function performed by engineer brigade commander.

Source: U.S., Department of the Army, Historical Division, United States Army in the World War, 1917-1919, Vol. I: Organization of the American Expeditionary Forces (Washington: U.S. Government Printing Office, 1948), p. 342.

Fig. 3.--A.E.F. division staff organization in 1918



Source: American Expeditionary Forces, Headquarters, General Order No. 14
(15 July 1917).

Fig. 4.--Infantry division major combat and support elements in 1917

Adjutant (see Figure 2, page 17). The only serious deficiency then existing in the general staff organization at the division level was the disparity among division, corps, and army on the numbers and types of general staff sections and their associated functions and responsibilities. This dissimilarity plagued the A.E.F. throughout the remainder of the war and was mentioned by General Pershing as one of the lessons learned during World War I. Army and corps staffs were organized with a G4 section to supervise supply, construction, transportation, hospitalization, and evacuation of the sick and wounded. At division level the lack of such a general staff section imposed those same requirements on the G1 Assistant Chief of Staff in addition to his normal functions of supervising the replacement of men and animals, organization and equipment of troops (in conjunction with G3), Provost Marshal services, remount services, disposal of captured men and materiel, preparation of requisitions, and responsibility for preparing strength reports and order of battle information.¹⁶

Duties and responsibilities.--The A.E.F. General Order No. 31 of 16 February 1918, which created the G1

¹⁶U.S., Department of the Army, Historical Division, United States Army . . ., Vol. XVI: General Orders, G.H.Q., A.E.F., p. 218.

section at division level, in effect established the G1 as the control and coordinating officer for all technical services and made the chief of each technical service an executive assistant. This organization did not materially affect the day-to-day operations of the technical services but, rather, funneled all information through the G1 to the Chief of Staff and subsequently to the commander.¹⁷ During the 1918-1919 period there was no G4 Assistant Chief of Staff at division or corps level, only at A.E.F. field army headquarters. While it is recognized that the G2, G3, and sections of the administrative staff are vitally important in all areas of plans and operations, it is not material to this study to comment on the functions of such staff elements except as they related to the eventual responsibilities of the division G4 section which was established soon after World War I.

As a point of departure in considering the responsibilities and functions of the G1 and the technical staff, it is appropriate to examine the doctrine taught in 1919 at The Army Service School (presently the U.S. Army Command and General Staff College). According to the course presented during that year, the duties of any staff--general,

¹⁷The Quartermaster School, p. 45.

administrative, or technical--were to anticipate operational and logistical requirements to support future missions, to assist the commander in arriving at a proper decision, to translate the decision into orders, and to insure by inspections that such orders were correctly executed.¹⁸ Even today these basic functions remain unchanged and are listed as follows: providing information, preparing estimates, making recommendations, preparing plans and orders, and supervising the execution of decisions.¹⁹

Although the functions of all staffs are included in the general categories above, it is essential to examine the functions of the technical staff as they pertained to supplies and services and to interrelate these functions with the general staff.

Regarding plans, the technical staff performed the following actions: advised the commanding general of requirements and limitations for support; prepared, either

¹⁸Emmett Addis, Capt, USA, "Relations of the General Staff Sections With the Army Service," Lecture on staff duties given at The Army Service Schools, The General Staff School, Academic Year 1919-20, contained in The General Service Schools' Printed Pamphlets: 1919-20 (Fort Leavenworth, Kans., College Library), p. 4.

¹⁹U.S. Army Command and General Staff College, Staff Organization and Procedures, ST 101-5-1 (Fort Leavenworth, Kans.: U.S. Army Command and General Staff College, 1964), pp. 5-6.

individually or in coordination with other technical services, the details of the plans; and recommended assignment of personnel to accomplish technical service functions.²⁰

During the execution of orders, the technical services directed the operation of personnel under their immediate command, determined whether the activities of technical service units of subordinate commands were properly executed, and coordinated and assisted the operation of subordinate units by furnishing supplies, exercising technical supervision at division level, and maintaining technical records.²¹

The duties of the G1 section concerned the following:

. . . requisitions, supply, ammunition, location of dumps, transportation, traffic, engineer construction, water supply, labor, salvage, captured men and material, administrative maps, statistics, replacements, men and animals, medical arrangements, inspections, military justice, claims, disbursements, camps and billets, spiritual welfare, comfort of troops, baths and laundries, disinfection plants, postal and express services and burials.²²

This impressive array of duties clearly distinguished the G1 as the workhorse of the general staff at that time. In addition to the above duties, he was also responsible for

²⁰Addis, Printed Pamphlets, p. 8.

²¹Addis, Printed Pamphlets, pp. 8-9.

²²Addis, Printed Pamphlets, p. 12.

preparing the administrative order, providing detailed instruction on the use of transportation and storage facilities, preparing consolidated class I requisitions, and coordinating all aspects of such duties with the appropriate general staff officer at corps and army levels.²³

Table 1 depicts the duties of the technical services at division level.

To amplify the lines of communication between the commander and the staff, Figure 5, page 29, is presented to show the command and coordination channels that normally existed within the division.

Organization of System of Supply

All supplies required by troops during World War I were divided into the four general classes discussed below.

Class I: Those items that were normally consumed at a uniform rate regardless of combat operations and that did not necessitate special adaptation to meet individual needs. Included within this category were rations, forage, fuel, lubricants, gasoline, and illuminants such as batteries. Class I items included all articles that could be issued on the basis of daily automatic supply.²⁴

²³Addis, Printed Pamphlets, pp. 12-14.

²⁴U.S., War Department, General Orders (Fort

TABLE 1
DUTIES OF THE TECHNICAL STAFF^a

<u>Office</u>	<u>Duties</u>
Quartermaster	Supply of food, clothing, and other quartermaster supplies Pay Upkeep of billets Salvage Baths and laundries Recreation facilities Use of the divisional supply train Graves registration Railroad shipment in United States Sales commissaries (traveling sales commissaries when needed)
Ordnance Officer	Supply and inspection of ordnance stores and equipment Supply of ammunition to units Repair of ordnance equipment
Assistant Provost Marshal ^b	Maintenance of order Traffic regulations Receipt, maintenance, guard, and employment of prisoners of war Apprehension of deserters, absentees, and stragglers Served as acting zone major Close touch with inhabitants

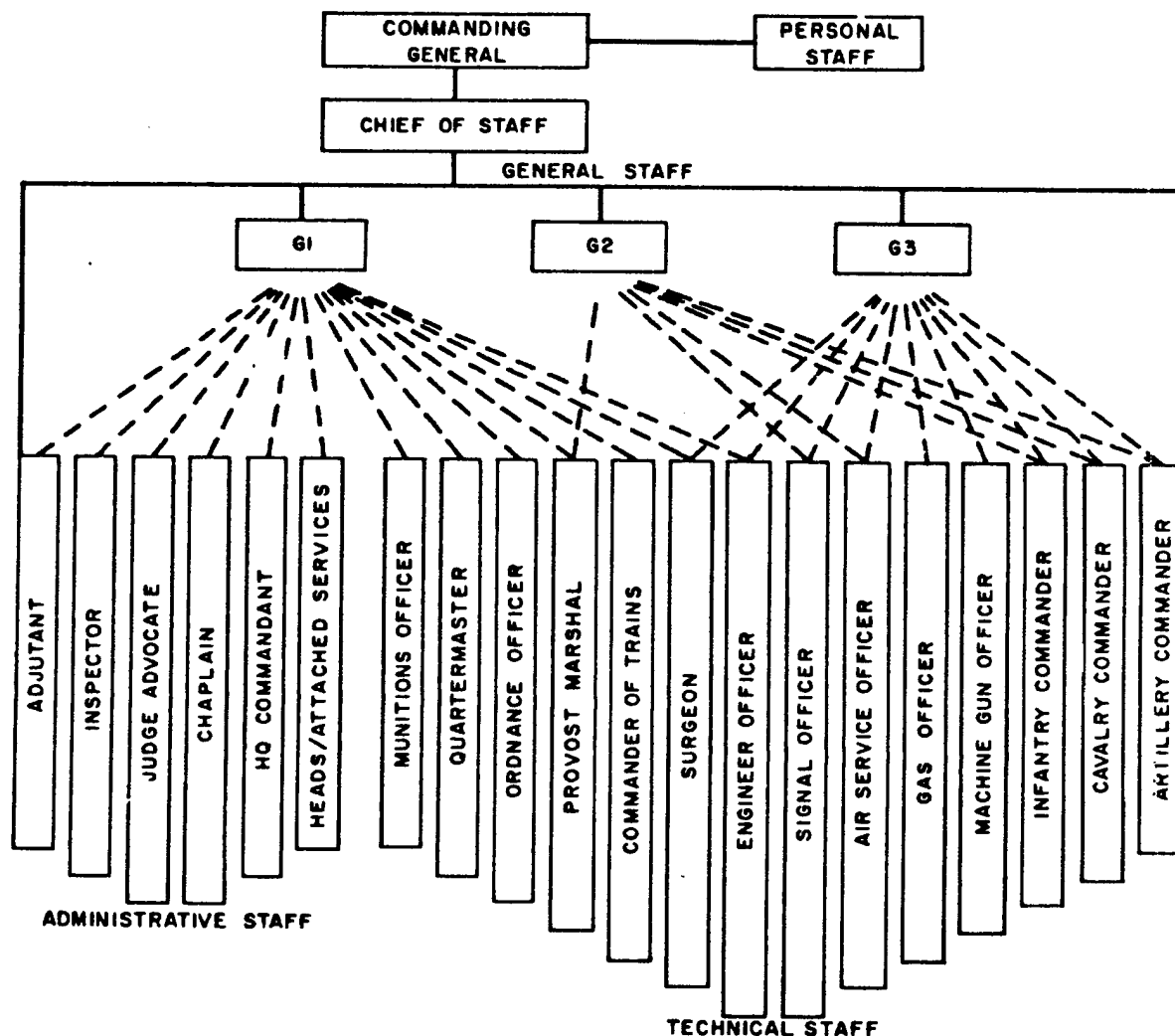
^aEmmett Addis, Capt, USA, "Relations of the General Staff Sections With the Army Service," Lecture on staff duties given at The Army Service Schools, The General Staff School, Academic Year 1919-20, contained in The General Service Schools' Printed Pamphlets: 1919-20 (Fort Leavenworth, Kans., College Library), pp. 19-20.

^bLocated in TOE of train headquarters and police.

TABLE 1--Continued

<u>Office</u>	<u>Duties</u>
Artillery Officer ^c	Artillery operations (G3) Artillery ammunition distribution from divisional ordnance officer (G1) Artillery information with infantry (G3) Use of divisional ammunition trains
Engineer ^c	Engineer operations (G3) Construction of quarters, roads, etc. (G3 and G1) Engineer supply and equipment (G1) Use of engineer train (G1)
Surgeon	Care and evacuation of sick and wounded (G1) Health and sanitation Use of sanitary train (G1)
Signal Officer	Wire and wireless communication (G3) Division signaling and pigeons (G3) Codes and ciphers (G3) Photographers Division message center (G3)
Chemical Warfare Officer	Defense against gas (G3) Supply of masks, offensive apparel, etc. (G1) Offensive operations (G3)
Machine Gun Officer	Employment of machine gun units (G3) Machine gun ammunition distribution from ammunition train (G1)

^cFunctions on division staff of chief of artillery and chief of engineers performed by commander of division artillery and division engineers, respectively.



Legend: — Direct Channel
 - - - Usual Channel (Routine Matters)

Source: Emmett Addis, Capt, USA, "Relations of the General Staff Sections With the Army Service," Lecture on staff duties given at The Army Service Schools, The General Staff School, Academic Year 1919-20, contained in The General Service Schools' Printed Pamphlets: 1919-20 (Fort Leavenworth, Kans., College Library), p. 26.

Fig. 5.--Division channels between commanding general and general staff in 1919

Class II: Those items of authorized clothing and equipment, consumed at a generally uniform rate, that were required for the personal use of the individual and further required special consideration to meet individual needs. Blankets, bedsacks, raincoats, helmets, gas masks, and clothing were type items of class II supplies.²⁵

Class III: Items of equipment authorized by tables of organization and equipment or by allowances published by the War Department or field force headquarters. Included in this category were arms, engineer, medical, ordnance, quartermaster, and signal equipment, including vehicles both animal drawn and motorized.²⁶

Class IV: Ammunition, bridge and road material, construction material, barbed wire, telephone and line material, lumber products, and railway ties were primary class IV items. In addition, class IV normally consisted of items in critical supply that required special considerations in their distribution, such as medical and photographic supplies.²⁷

Supplies within the division were requested, obtained, and distributed in the manner discussed below.

Leavenworth, Kans., College Library), pp. 253-254.

²⁵ Ibid., p. 254.

²⁶ Ibid.

²⁷ Ibid.

Class I: The regimental supply officer submitted supply requirements for class I, articles of automatic supply, through the division personnel adjutant to the division quartermaster, who consolidated the returns and transmitted the division requisition to the G1. The requisition was based on the actual strength of the division even though requests were for supplies four days hence. Supplies would arrive either specifically marked for the division or in bulk for distribution on an area basis. Use of the latter marking resulted in receiving shortages or overages of some supplies from the railhead, the Army distribution point, and necessitated a further system of credits and debits. Once supplies arrived in the railhead they were moved on division transportation to division class I "dumps." While the division quartermaster had control over the horsedrawn transportation, he was dependent on the commander of trains for the use of motor vehicles, normally between 50 to 100 three-ton trucks, in order to distribute supplies. This was not a great problem since the division G1 normally placed the division vehicles under the commander of trains. Supplies were moved under most conditions from the division class I dump by motor transportation to the unit field train, where transloading to horsedrawn wagons of the unit's field team was then accomplished as the last phase of the distribution

system.²⁸

Class II: Requisitions were submitted by company commanders through regimental commanders to the particular technical staff officer concerned. After each request had been checked for accuracy, it was sent to the G1 for approval and then forwarded directly to the army supply depot supporting the division. Supplies were shipped from the army depot directly to the division dumps for storage or issue as appropriate. The same procedures used for class I articles applied for movement of supplies from the dumps to the requesting unit.²⁹

Classes III and IV: Supplies included in classes III and IV were requisitioned in the manner prescribed for class II articles. The division supply officer received the requisitions and filled them from supplies stored by the division. Requisitions for supplies not available within the division were forwarded through the G1 to the army G4 for subsequent shipment.³⁰

The preceding paragraphs indicate the apparent importance of the G1 role at division level. The significance of this is obvious since the division G4 section, which came into being in 1921, was to assume the majority of

²⁸Ibid.

²⁹Ibid., p. 255.

³⁰Ibid.

these functions. Perhaps the key to understanding the real importance of this section is summed up by the following excerpt that was issued in 1918 by the G4 of 1st Army to a new division on line that had taken its position on the front after the second battle of the Marne: "No messages, requisitions, or calls of any kind whatsoever will be recognized by G4, 1st Army, from any divisional staff officer other than the Chief of Staff, or the Assistant Chief of Staff, G-1."³¹

G4 Section Established at Division Level

Correct organization demands an identical, as nearly as may be, staff system from the battalion to the War Department. One of the mistakes made in the A.E.F. was the failure to provide throughout such a system. Each unit should have a Chief of Staff and the four G's.³²

General Pershing, Commander, American Expeditionary Forces in Europe, wrote the above remarks after World War I. It was largely through his recommendation and that of the Superior Board, convened after World War I to consider the lessons learned during the war, that the G4 section was established at division level in 1921. Although other

³¹The Quartermaster School, p. 57.

³²American Expeditionary Forces, General Headquarters, Report of Superior Board on Organization and Tactics, 19 April 1919 (Washington: G.H.Q., A.E.F., 1919), Gen. Pershing's "Wrapper Indorsement," 16 June 1920, p. 6. (Mimeographed.)

boards were convened shortly after the war to evaluate staff organizations, field artillery, and the various branches of the arms and services, it is generally considered that the Superior Board report had the greatest impact on the War Department. General Pershing's lengthy and systematic evaluation of the Board's recommendation was also reflected in post-war teaching at The General Service School and in the field service regulations published in 1923.

Based on experiences gleaned during World War I, the Board, which consisted of five general officers and two colonels, divided the services into three staffs at division, corps, and army levels. These staffs were the Administrative Staff, consisting of the Adjutant, Inspector, Judge Advocate, Chaplain, and Provost Marshal services; the Technical Staff, consisting of the Engineers, Signal, Medical, and motor transport services; and the Supply Staff, containing the Quartermaster, Ordnance, and Transportation services. The Board further recommended that the division general staff sections be organized as follows: the G1 Section, "Director of Personnel"; the G2 Section, "Director of Intelligence"; the G3 Section, "Director of Operations"; and the G4 Section, "Director of Logistics."³³ Additionally,

³³Ibid., pp. 6-7.

the Board ventured the first formal definition of logistics:

Logistics embraces all that has to do with the supplies of armies. . . . It covers the procurement, transportation, storage and distribution of supplies of all kinds, . . . construction, hospitalization and evacuation. The activities of the Engineers, Signal, Medical, Motor Transport, Ordnance and Transportation services fall within this category.³⁴

The Board also firmly recommended that the technical and supply staffs, consisting of the services outlined above, be placed under the control of the G4 and that the administrative staff work under the control of the G1. Throughout the Board report there was discussion over the terminology "general staff" and "director staff." The difference was primarily one of semantics since the Board intent was quite clear. It should be noted at this point that the basic difference between the two was primarily in degrees of authority. While the director type staff normally has the inherent authority to issue orders in his own name, the general staff issues such orders in the name of the commander. The Board recommended the director type staff since it was believed to approximate more closely the true function. However, this particular part of the Board's recommendation was not approved and, as a result, the general staff concept and terminology were adopted.

³⁴Ibid., p. 7.

Based on recommendations of the Superior Board and others convened after the war, certain changes were made within the division and new tables or organization which established the G4 section at division level were published in 1921.³⁵

³⁵The General Service Schools, Tables of Organization: Infantry and Cavalry Divisions (rev. ed.; Fort Leavenworth, Kans.: The General Service Schools Press, 1925), p. 6.

CHAPTER III

DIVISION G4 DURING THE PERIOD 1921-1939

The two-year aftermath of the "war to end all wars" was devoted largely to examining and refining procedures that had proved inadequate during World War I. Based on the recommendation of the Superior Board convened after the war, the division G4 was established in 1921. As a result, many duties and functions in the areas of supply and evacuation which had been the responsibility of other general and special staff officers were consolidated at division level for the first time in the history of the United States Army under one coordinating officer--the division G4.

The shifting of such duties and responsibilities to this newly activated staff section quite naturally precipitated significant changes within the division in the technical and administrative areas of supply and evacuation procedures. Accordingly, this chapter concerns the details of organization, command and staff relationships, duties and responsibilities, administrative procedures, and the system of supply insofar as they related to the G4 section during the period 1921-1939.

Organization

The basic structure of the division as modified by General Pershing (see Figure 4, page 21) proved sound, and as a result no major changes were made in its organization immediately following the war.

The real significance of the division tables of organization published in 1921 was principally in reorganization of the general staff and, to a lesser extent, the technical and administrative staff. Specifically, the tables established the four sections of the general staff in the functional areas of personnel, G1; intelligence, G2; operations, G3; and supply, G4. During the four years 1917 through 1921, the division staff had received an augmentation of two general staff sections: personnel and logistics.¹

The G1 section, as previously indicated, had been authorized and organized at division level by General Pershing during World War I but had not been included in the official War Department tables of organization until 1921. Conversely, the G4 section did not come into being until

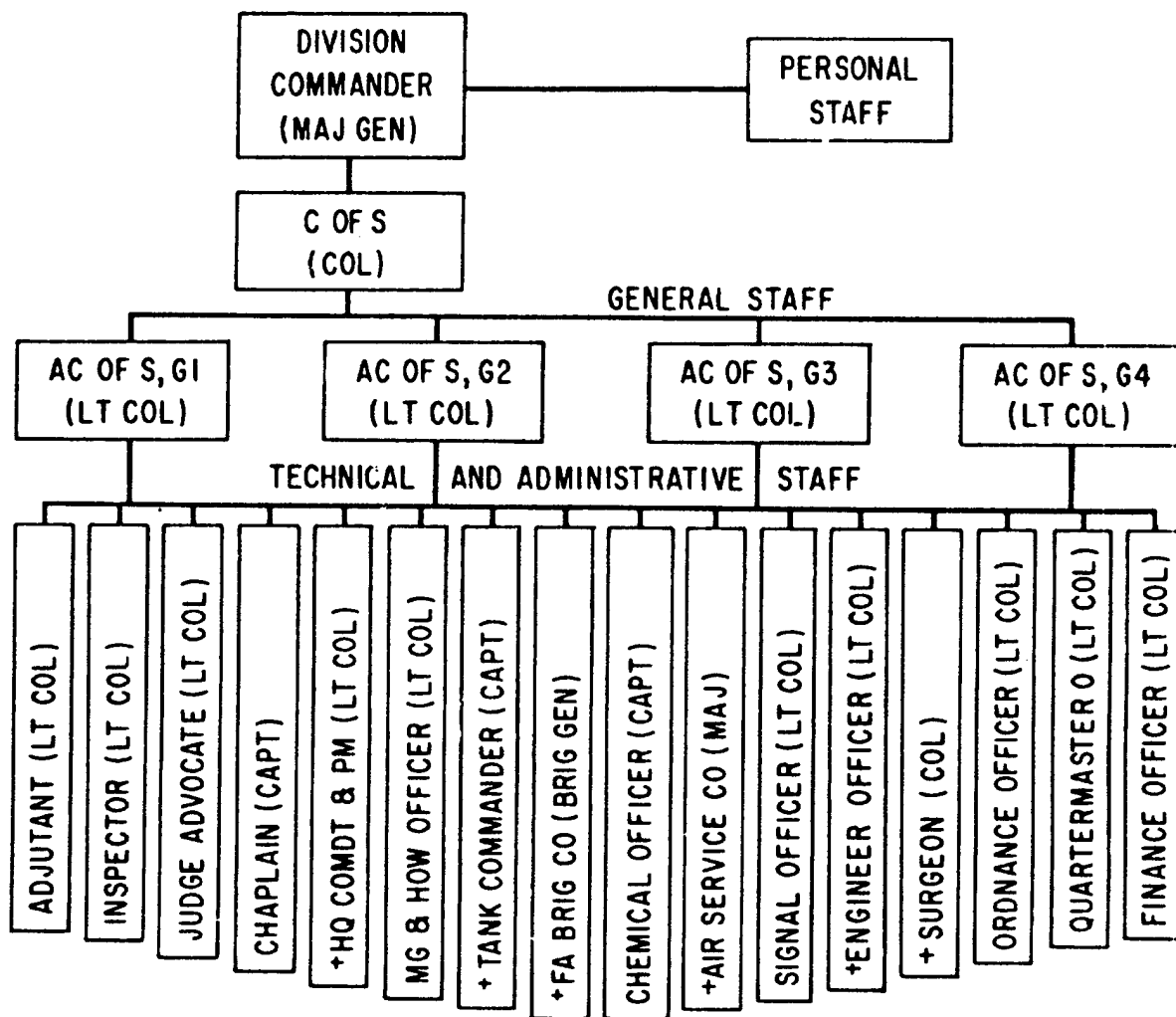
¹U.S., War Department, Table of Organization 2W, 27 April 1921 (Washington: U.S. Government Printing Office) as contained in Tables of Organization: 1933 (a collection of tables of organization for the period 1921 through 1935; Fort Leavenworth, Kans., College Library).

publication of the 1921 tables. The authorization of this section at division level was prompted, to a large degree, by the 1919 recommendations of the Superior Board to the War Department.

Besides addition of the two general staff sections, there were three other significant developments which also deserve comment. First, it is noted that the War Department adopted the "G" staff terminology which had been practiced during the war. Further, the rank of each general staff section chief was lieutenant colonel and the officer was designated "Assistant to the Chief of Staff." Finally, the Adjutant General, who had served as the division G1 during the war, was shown on the administrative and technical staff and was responsible for publications and records.² Figure 6 depicts the 1921 organization of the division staff.

The basic differences between the organization of the G4 section within the infantry division and the cavalry division were in two areas: the grade authorization of the G4 and the number of assistants assigned to his section. The G4 in the cavalry division could be a lieutenant colonel, a major, or a captain, whereas the infantry division table of organization designated a lieutenant colonel for

²Ibid., p. 2.



*Staff officers who also commanded division units.

Sources: The General Service School, Military Organization of the United States (Fort Leavenworth, Kans.: The General Service School Press, 1924), p. 45; and U.S., War Department, Table of Organization 2W, 27 April 1921 (Washington: U.S. Government Printing Office, 1921).

Fig. 6.--Division staff organization in 1921

this position. Additionally, the cavalry division made allowances for only one commissioned assistant, either a major or a captain, and eliminated the space for a warrant officer. This situation was not peculiar to the cavalry division G4 but applied equally to all general staff sections.³ The rationale for the difference in strength authorization between the two divisions might be found by examining the total strength of each division. The infantry division was authorized a war strength figure of 19,995 to include 908 officers, 24 warrant officers, and 19,063 enlisted men. The cavalry division was authorized a war strength figure of 7,549 to include 406 officers, 18 warrant officers, and 7,125 enlisted men.⁴ It may be assumed from the two sets of figures that the requirements for rank and personnel required within the general staff sections were not as great in the cavalry division as in the infantry division, and hence a corresponding reduction of the staff was effected.

³U.S., War Department, Table of Organization 402W, 4 April 1921 (Washington: U.S. Government Printing Office) as contained in Tables of Organization: 1933 (a collection of tables of organization for the period 1921 through 1935; Fort Leavenworth, Kans., College Library).

⁴The General Service Schools, Tables of Organization: Infantry and Cavalry Divisions (rev. ed.; Fort Leavenworth, Kans.: The General Service Schools Press, 1925), pp. 4 and 58.

Although the tables of organization published in 1921 made no major changes in the division organization employed in France during the final stages of World War I,⁵ there were substantial changes in its organization and method of operation during the next seventeen years. These changes were primarily in the area of the technical and administrative services. With minor exceptions the combat elements remained basically the same. There were still two brigades of infantry composed of two regiments per brigade, an engineer brigade, and an artillery brigade of three regiments.⁶

Supply and administrative units of the division underwent gradual but substantial changes. Specifically, the train units shown in Figure 4, page 21, were eliminated and the majority of supply elements were organized along functional lines. The commander of the division trains became known as the special troop commander and was

⁵This fact was derived by examination and comparison of the infantry division tables used in 1918 (U.S., Department of the Army, Historical Division, United States Army in the World War, 1917-1919, Vol. I: Organization of the American Expeditionary Forces [Washington: U.S. Government Printing Office, 1948], pp. 341-381) and Table of Organization 2W, 27 April 1921 (U.S., War Department, Tables of Organization: 1933).

⁶The Command and General Staff School, Tables of Organization (Fort Leavenworth, Kans.: The Command and General Staff School Press, 1938), p. 9.

responsible only for the operation of a signal company, ordnance company (medium), and the military police company. Heretofore all technical and administrative units within the division had been organized under the commander of trains. Moreover, the division organization began to approximate the functional method of providing logistical and administrative support although it was still far from the advanced stage realized in the present divisional concept. Nevertheless, the medical regiment and the quartermaster regiment were developed and listed as separate organizational entities. In this regard, the division quartermaster and the surgeon each functioned as a special staff officer at division level and as a regimental commander. In their role as staff officers they provided technical advice to the commander and general staff; as regimental commanders they conducted technical inspections of their respective units and were responsible for the training and operations within their respective regiment.⁷ The "dual hat" responsibility of certain officers became the "fad" of the "square" division, a term commonly applied to the division and based on the four

⁷The Command and General Staff School, Regular Course, 1937-1938: G-4 Course [and] G-5 Course, Tactics & Technique of Separate Arms (Fort Leavenworth, Kans., College Library), "Medical Service of Infantry Division" (conference; mimeographed), p. 11.

regiments authorized between 1921 and 1940. This dual responsibility of certain officers, as later pointed out, carried over to the "triangular" division of three regiments which was organized in 1940. Throughout World War II, this concept was practiced without any apparent ill effects.

Conversely, changes within the division ordnance service were not as far reaching. One of the two Ordnance Corps officers authorized, normally a lieutenant colonel, functioned at division level as a special staff officer, and the other, normally a lieutenant, was in charge of the ordnance company organic to special troops. The operation and technical training of the ordnance company were supervised by the division ordnance officer, whereas the company, as a unit of the division special troops, was subject to the special troops commander for matters of administration, unit supply, and discipline. The primary reasons for placing the ordnance unit under division trains, the special troops, were, first, that it was essentially a mobile service station which contained spare parts, accessories, and a limited number of light replacement items such as pistols, rifles, and machine guns and, second, it was grouped with division motor elements controlled by the special troops commander.⁸

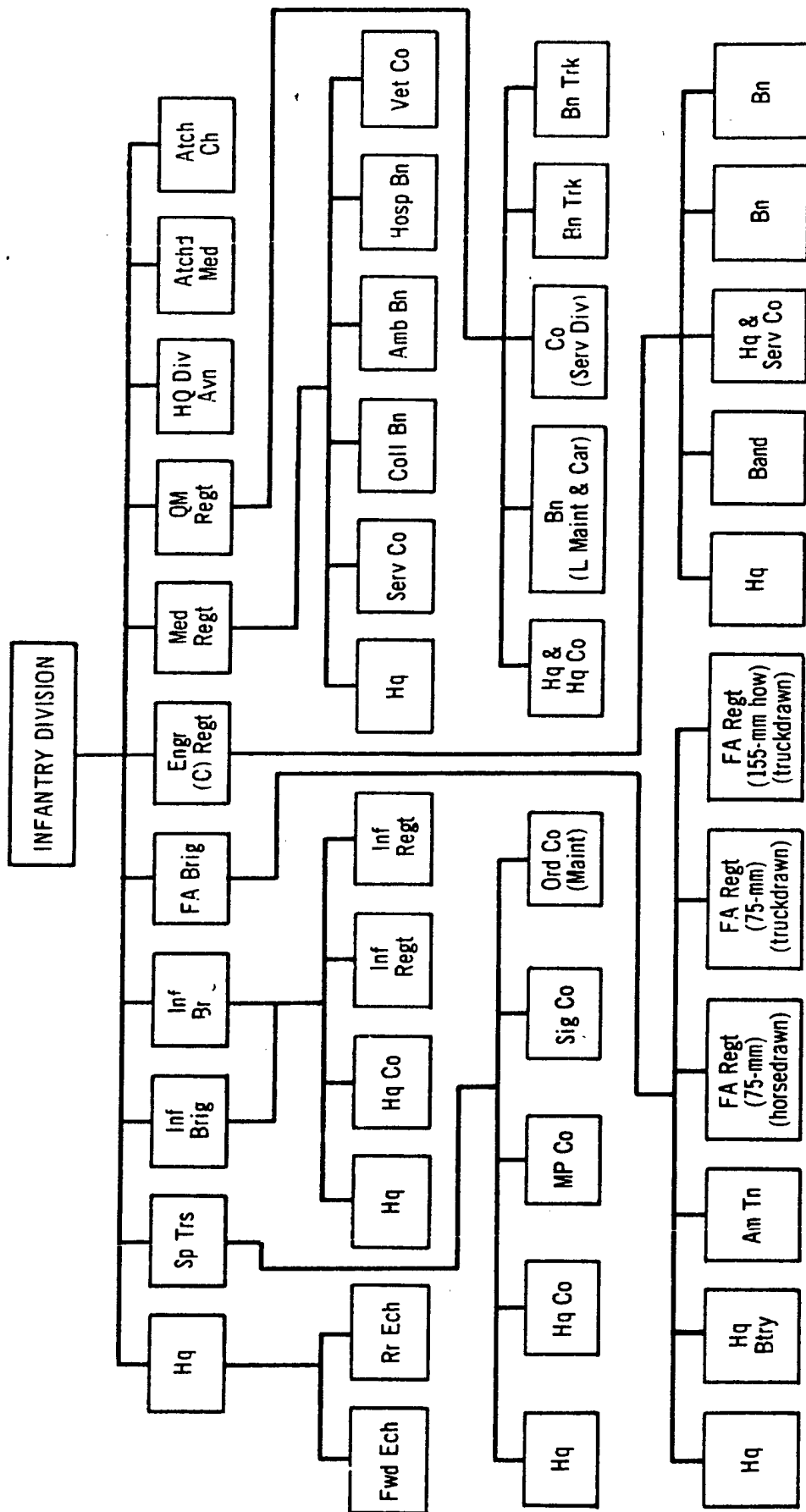
⁸Ibid., "Ordnance Service in the Infantry Division" (Mimeographed), pp. 1-3.

The organization of the 1938 infantry division is shown in Figure 7.

The only significant change that occurred between 1921 and 1938 as regards organization of the G4 section was the reduction in the number of personnel authorized, with accompanying changes in the authorized grade of commissioned and enlisted personnel. By 1937 the G4 section was authorized only one lieutenant colonel, one captain, one master sergeant, and 10 privates.⁹ One commissioned assistant and the warrant officer had been eliminated; one staff sergeant had been replaced by a private first class and the chief enlisted man had been upgraded to a master sergeant. Tables 2 and 3 reflect the typical G4 section organizational structures of 1921 and 1937 and readily identify the impact which the overall division reorganization had on this section.

The elimination of the commissioned assistant was prompted by the functionalization of the medical service under the division surgeon and the corresponding organization of the medical regiment. Since the G4 was still responsible for medical services coordination, hospitalization, and evacuation within the division, it is quite

⁹The Command and General Staff School, Command and Staff Principles (Tentative) (Fort Leavenworth, Kans.: The Command and General Staff School Press, 1937), pp. 97-98.



Source: The Command and General Staff School, Tables of Organization (Fort Leavenworth, Kans.: The Command and General Staff School Press, 1938), p. 9.

Fig. 7.--Infantry division organization in 1938

TABLE 2
TYPICAL G4 SECTION OFFICE ORGANIZATION IN 1921^a

<u>Personnel</u>	<u>Duties</u>
Lieutenant Colonel or Major	In general charge of the section Handled all questions of policy and priority Conducted inspections
Captain or 1st Lieutenant	In charge of supply and transporta- tion section
Captain or 1st Lieutenant	In charge of evacuation and con- struction subsection
Warrant Officer	Correspondence, office files, and records
Staff Sergeant	Mimeographing Dispatch of orders
Sergeant	Typist and Clerk
Private	Orderly and Messenger

^aThe General Service Schools, School of the Line,
1920-1921 Course in Divisional Logistics (Fort Leavenworth,
Kans., College Library), pp. 117-118.

TABLE 3
TYPICAL G4 SECTION OFFICE ORGANIZATION IN 1937^a

<u>Personnel</u>	<u>Duties</u>
Lieutenant Colonel	Assistant Chief of Staff, G4 In general charge of the section Handled all questions of policy and priority Conducted inspections
Captain	In charge of supply and transporta- tion functions
Master Sergeant	Chief Clerk Handled journals, records, office routine, and routine data for incorporation in section reports
Private First Class	Draftsman Messenger Janitor Available to G1 when needed
Private First Class	Stenographer Clerk-Typist Mimeographer

^aThe Command and General Staff School, Command and Staff Principles (Fort Leavenworth, Kans.: The Command and General Service School Press, 1937), p. 98.

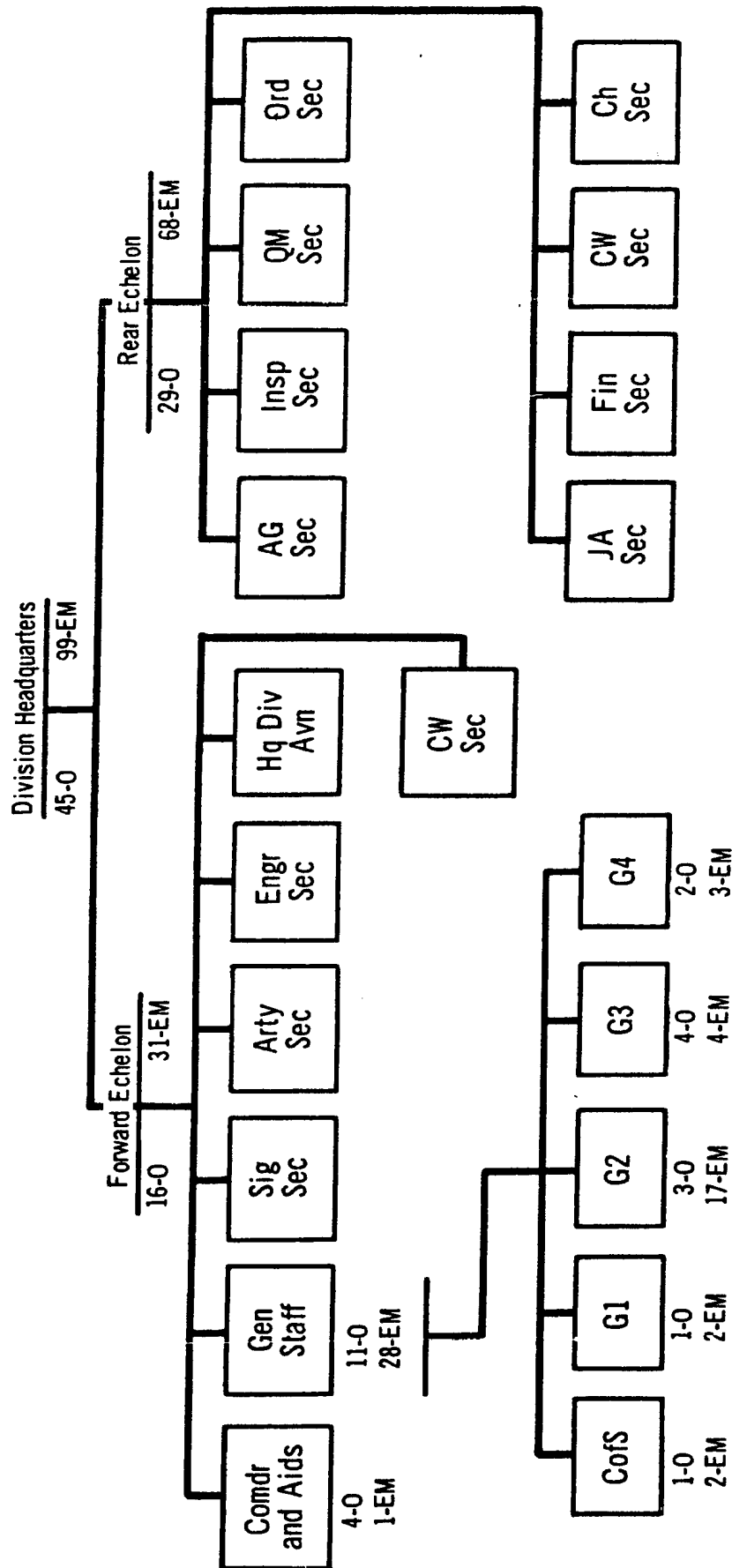
logical that the division surgeon, as a technical staff officer, would perform those administrative functions which had been performed previously by a commissioned assistant in the G4 office.

By 1938 the organization of division headquarters had evolved into rear and forward echelons. The G4 and all general staff officers were listed as a part of the forward echelon. This echelonment of the division staff organization, which is shown in Figure 8, was significant in that it became the forerunner of the present-day procedure of establishing the division main and alternate command post locations and a tactical operations center.

Following the gradual reorganization of the division between 1921 and 1938, there were no significant G4 changes until authorization and organization of the "triangular" division in 1940.

Command and Staff Relationships

The introduction of the G4 to the general staff did not alter established basic precepts of command and staff relationships. Like other general or special staff officers, the G4 is an assistant to the commander and performs those duties delegated to him by the commander. The staff officer is not in the chain of command and therefore has no



Source: The Command and General Staff School, Tables of Organization (Fort Leavenworth, Kans.: The Command and General Staff School Press, 1938), p. 10.

Fig. 8.--Infantry division headquarters in 1938

authority save that which is specifically delegated to him by the commander. This basic tenet was equally applicable in the past.

It is interesting to note, therefore, that a text published in 1937 authorized the general staff officer to give "supplementary" orders after the commander had given his approval to a specific decision or basic plan. This doctrine did not allow the staff officer to issue contrary or amendment orders, only orders in furtherance of the commander's decision.¹⁰ Moreover, the G4 exercised only such supervision over commanders and staff officers of subordinate units as was specifically delegated to him by the commander or in compliance with previously announced policies.¹¹

The relationship of the G4 to other general staff officers and special staff officers may primarily be summed up in one word--coordination. Frequent coordination was required by the G4 on all matters related to supply. Cooperation with the G1 was necessary on matters pertaining to the military police, evacuation of prisoners of war, mail delivery, and disposition of captured material. Coordination was likewise required between the G4 and the G3 in

¹⁰Ibid., pp. 29-30.

¹¹Ibid., p. 38.

order to anticipate changes in the tactical situation that might correspondingly cause a variation in the supply requirements. Finally, teamwork was required among all of the general staff in the preparation of the administrative order, for which the G4 had primary staff responsibility.¹²

With regard to the technical and administrative staffs, the surgeon, quartermaster, and ordnance officer conducted the bulk of their activities in close coordination with the G4.

The engineer officer consulted with the G4 section on construction matters and on the employment of nontactical troops. The commander of special troops, as the provost marshal, dealt with this section on traffic control matters. Finally, all officers coordinated with the G4 on supply requirements. In this regard it is significant that the G4, more than any other general staff officer, frequently issued instructions within his area of interest to the technical and administrative staffs and to the troops as well. In addition, this officer coordinated and directed the supply elements within the division without actually operating the supply system. These supply elements usually dealt directly with the G4, who settled all routine questions and referred

¹²Ibid., p. 59.

to the chief of staff only those areas which involved new policies. However, it should be mentioned that both the technical and administrative staffs could deal directly with the commander or the chief of staff when required.¹³

Duties and Responsibilities

The first reference to the duties of a division G4 was found in a text used at The General Service School, "School of the Line," during the 1920-21 academic year. The duties were listed as follows:

- (a) Individual equipment of men.
- (b) Organization of equipment.
- (c) Replacement of animals.
- (d) Condition of motor and animal transport.
- (e) Reserve ammunition on hand.
- (f) Prescribed allowance of ration and forage on hand.
- (g) Condition of mobile ordnance repair shop.
- (h) Status of motor spare parts, condition of service parts units and the overhaul of motor transport.
- (i) Evacuation of men and animals.
- (j) Salvage and prompt evacuation of same.
- (k) Inspections of services and troops.
- (l) Operation of sales commissaries, baths, laundries, drying rooms and disinfectors.
- (m) Payment of troops.
- (n) Upkeep of area.¹⁴

Although the duties listed above were those relating

¹³The General Service Schools, Command, Staff and Logistics (Fort Leavenworth, Kans.: The General Service Schools Press, 1923), Vol. I, p. 70C.

¹⁴The General Service Schools, School of the Line, 1920-1921 Course in Divisional Logistics (Fort Leavenworth, Kans., College Library), "Supply of a Division in a Rest Area: The Assistant Chiefs of Staff G1 and G4," p. 117.

to the G4 function for the supply of a division in a rest area, they nonetheless represented a beginning in establishing the duties of the G4. It was 1923 before a more accurate and encompassing description of his duties was given in still another General Service Schools text. The 1923 publication charged the G4, or the fourth section as it was then commonly called, with the formulation of plans, priorities, policies, and decisions (!) required in coordinating and supervising the technical and administrative staffs in the areas of transportation, supply, hospitalization, evacuation, and equipment maintenance. The specific duties of the G4 section were itemized in 1923 as follows:

- (1) Prepares administrative plans, orders and G4 situation maps.
- (2) Coordinates the final locations of all dumps, distributing points and other supply establishments.
- (3) Coordinates and supervises the procurement, storage and distribution of all supplies and equipment, including water, transportation, ammunition, electric light and power.
- (4) Approves all requisitions for supplies going to higher authority.
- (5) Supervises the hospitalization and evacuation of all sick and wounded men and animals.
- (6) Controls the trains in certain situations and operates transportation pools.
- (7) Controls traffic.
- (8) Supervises all construction activities including repair and maintenance of roads.
- (9) Supervises the operation and location of all utilities, such as baths, laundries and disinfecting plants.
- (10) Supervises the operations of the finance officer.

- (11) Coordinates and supervises salvage and burial, including disposal of captured animals and materials.
- (12) Maintains complete supply statistics relating to the needs of the division.
- (13) Controls the movement of service troops when their duties fall within the scope of the general functions of the section.
- (14) Cooperates with G3 in movements by truck, train and boat.¹⁵

Comparison of the 1921 and the 1923 duties revealed that only the function of area maintenance was deleted in 1923. More significant, however, were the additional responsibilities assumed by the G4. It is apparent that the newly established staff section was undergoing a transition and, as the proper role of the G4 was becoming more clearly understood, added duties were absorbed. Some of the added duties, unfortunately, should not have been given to the G4 section. In other instances the scope of the responsibility should have been limited. The responsibility for "supervising the operations of the finance officer" is an example of the former case and the "responsibility for construction" is typical of the latter case. Specifically, the quartermaster officer, under the general staff supervision of the G1, had been responsible for paying the troops. Logically, when the quartermaster officer was placed under general supervision

¹⁵The General Service Schools, Command, Staff and Logistics, Vol. I, p. 70B.

of the G4, the function of "payment of troops" was also brought under staff supervision of the G4. When this function was transferred from the quartermaster officer to the finance officer, the G4 still retained overall general staff supervision for this action. The assignment of construction responsibility to the G4 was obviously incorrect since both the G3 and the G4 shared equally in the performance of this function--the G3 for fortifications and other tactical operations, and the G4 for maintenance of storage areas, main supply routes, and construction of facilities. A possible explanation for assigning the entire responsibility for construction as a G4 responsibility is drawn from General Order No. 31, Headquarters American Expeditionary Forces, which cited construction as a function of the G4 section.¹⁶

The Manuscript for Training Regulations No. 550-10: Note Book for General Staff Officers with Combatant Troops, published by The General Service Schools in 1924, further refined and elaborated the duties and responsibilities of the division G4.¹⁷ Since this manual is so complete in

¹⁶U.S., Department of the Army, Historical Division, United States Army in the World War, 1917-1919, Vol. XVI: General Orders, G.H.Q., A.E.F. (Washington: U.S. Government Printing Office, 1948), p. 221.

¹⁷The author considers this manual to be the most authoritative and detailed treatment of the duties of the G4, not only for this period but for the entire history of

scope and so precise in content, paragraphs pertinent to the division G4 duties for that period are extracted in Appendix A. The areas considered were basic duties, mobilization and training, troop movements, security, combat (offensive), and combat (defensive).¹⁸ A comparison of the 1923 and 1924 duties revealed that the original responsibility of the G4 for "payment of troops" was deleted, that G4 responsibility for construction did not extend to the tactical aspects, and that the following more important responsibilities were added to the G4 section:

(4) The maintenance and repair of equipment,
including the location of the establishments involved.

.....
(6) Property accountability and responsibility.

.....
(14) The apportionment of labor troops.

(15) Estimates for funds and priority of expenditures.

(16) Leasing or purchase of real estate.
.....

e. Arranges through the chief of staff with higher headquarters for assistance in supply, transportation,

the division G4. It is unfortunate that this publication has not been revised, updated, and perpetuated within the school curriculum since it would materially assist student officers in understanding the scope and magnitude of the G4 responsibilities. Moreover, this publication would be a definite asset to all commanders and staff officers in the field.

¹⁸ The General Service Schools, Manuscript for Training Regulations No. 550-10: Note Book for General Staff Officers with Combatant Troops (Fort Leavenworth, Kans.: The General Service Schools Press, 1924), pp. 1-88. (Mimeographed.)

evacuation, and hospitalization, and provides for the details of this assistance with respect to the division when necessary.

i. Prepares and keeps up to date:

- (1) Journal.
- (2) Situation map.

k. Prepares:

- (1) Circulation map . . .

- (3) Periodic reports.¹⁹

No further changes were made in the impressive list of G4 responsibilities until publication in 1928 of the Staff Officers' Field Manual: United States Army, which basically retained all of the duties heretofore listed and added the following activities:

b. Transportation by land and water, including the operation of such ports of embarkation and debarkation and necessary auxiliaries as lie in the theater of operations of the unit concerned, and the control of which is not held by the zone of the interior.

d. Recommendations as to the new types of equipment, new Tables of Equipment, or changes in existing Tables of Equipment (with concurrence of operations and training section).

p. Continual study of the situation so as to be ready to meet prospective or emergency changes with adequate supply arrangements.²⁰

Two of the duties cited above warrant comment. The

¹⁹ Ibid., pp. 8-10.

²⁰ U.S., War Department, Staff Officers' Field Manual: United States Army, Chap. I: Staff Principles and Functions (Washington: U.S. Government Printing Office, 1928), pp. 14-15.

responsibility for port operations is seemingly a taxation on the resources of a division, particularly if the unit is engaged in combat operations. Whereas previous references dealt solely with the division G4, the 1928 publication encompassed the general staff of all echelons of command, and on this basis it appears that the assignment of port and beach operations might well be included as a G4 responsibility at field army level. Conversely, it is not wholly unrealistic to assume that a division operating on an independent or semi-independent mission might be required to conduct limited beach or port operations if such operations were essential to accomplish the mission. The second area of comment is the responsibility for "continual study of the situation," which could be regarded as the background for the G4 "estimate of the situation." This appears likely since the concept for the G4 estimate had not been mentioned in any publication and, as shown later, was not introduced as a problem solving device for the G4 until 1937. While only a speculation, it appears logical to affix this responsibility as a formal beginning of the estimate process.

The 1932 edition of Staff Officers' Field Manual²¹

²¹U.S., War Department, Staff Officers' Field Manual, Part I: Staff Data (Washington: U.S. Government Printing Office, 1932), pp. 14-15.

and the 1937 publication of Command and Staff Principles (Tentative) by The Command and General Staff School²² were basically the same as the 1928 staff manual insofar as they pertained to the duties of the supply section. The next variation in G4 duties and responsibilities was evidenced in 1940 and is covered in Chapter IV.

Administrative Procedures

Plans. --One of the most important functions of the G4 during this period, and still applicable at the present time, was the formulation of the plans for supply and evacuation. Although planning is a basic responsibility of command, it is a routine duty of each staff officer. Since the G4 is the primary logistics planner for the division, it is appropriate to outline the steps required in formulating the logistics plan. These steps are listed as follows: collection of information and data, estimate of the supply and evacuation situation, formulation of the general plan of supply and evacuation, and formulation of the administrative plan.²³

²²The Command and General Staff School, Command and Staff Principles (Tentative), pp. 58-59.

²³The Command and General Staff School, Regular Course, 1939-1940, G-4 (Fort Leavenworth, Kans., College Library), Vol. XVIII, Lecture, "G-4 Planning" by Lt Col P. J. Mueller, Inf, 17 November 1939, Mimeographed p. 1.

Field and administrative orders.--Many of the duties previously performed by other general staff officers were transferred to the G4 in 1921. One of the principal functions was preparing the administrative order and, closely related to this, meeting the requirement to provide pertinent supply and administrative data for inclusion in the field order prepared by the G3, which later evolved into what is now called the operations order.

Paragraph 4 of the field order was devoted to administrative, supply, traffic control, and evacuation details, all of which were of particular interest to the G4. The inclusion of all necessary details concerning supply and administrative instructions at division level normally made the fourth paragraph so voluminous that it usually contained merely a reference to the administrative order issued with the field order.²⁴ The following passage points out the large scope of the administrative order.

In general, the administrative order of a division gives the location of railheads; supply establishments; refilling and distribution points for rations, ammunition, and other supplies; hospitals and collecting stations for men; collecting stations for sick and wounded animals; instructions for evacuation of sick and wounded men and animals; instructions for maintenance of roads and for the circulation and restriction of traffic

²⁴The General Service Schools, Combat Orders (Fort Leavenworth, Kans.: The General Service Schools Press, 1922), p. 30.

thereon; instruction for salvage and burial; military police; prisoners of war; and the trains.²⁵

Based on the detailed considerations of this order, it is obvious that a great deal of coordination was required by the G4 with other general staff officers and members of the technical and administrative staff. In this regard the G1 coordinated the administrative details and prepared those parts of the order which pertained to his section. Concurrently, the G4 consulted with the G3 to insure complete agreement between the tactical and logistical plans.²⁶

An administrative order did not necessarily accompany a field order since fragmentary field orders which did not basically alter original administrative instructions were frequently issued during certain operations. Conversely, it sometimes became necessary to issue fragmentary field orders without requiring the issue of revised or new field orders.²⁷

The first example of any instructions governing the preparation of the administrative order appeared in 1922 and

²⁵U.S., War Department, Staff Officers' Field Manual, p. 41.

²⁶U.S., War Department, Staff Officers' Field Manual, p. 40.

²⁷The General Service Schools, Combat Orders, pp. 39-40.

showed a format with the following eight paragraphs: supply, evacuation, roads, salvage and burial, military police, prisoners of war (PW), trains (service, field, and combat), and miscellaneous.²⁸

The field service regulations published by the War Department in 1923 adopted a six-paragraph administrative order (see Appendix B). The construction and maintenance of roads was placed under the general heading "Traffic"; the PW function was placed under the general heading "Evacuation." This format was used with only minor changes until 1940.

Voluminous details necessary for inclusion in the administrative order were normally placed in an appropriate annex identified as administrative map, circulation map, quartermaster plan, ammunition plan, engineer plan (other than tactical), medical plan, ordnance plan, signal plan (other than tactical), aviation (or air force) plan (other than tactical), or railhead plan.²⁹ Such annexes were normally compiled at the end of the administrative order and were referred to in the appropriate paragraphs.

Estimates.--Since its beginning the general staff

²⁸The General Service Schools, Combat Orders, pp. 68-71.

²⁹U.S., War Department, Staff Officers' Field Manual, pp. 42-43.

has been a closely coordinated group of assistants to the commander. It was and still is organized to perceive the basic functions of command in areas of military planning and operations. A principal duty of each general staff officer is to furnish the commander sound recommendations upon which to base decisions on the employment of his command.³⁰ One of the most common vehicles for presenting recommendations to the commander is the "estimate of the situation."

The estimate of the situation is a problem-solving process, the purpose of which is to arrive at the best way to accomplish a task or mission. It involves a consideration of all the facts or circumstances affecting the situation and a systematic analysis and evaluation of the possible ways to accomplish the task or mission, thus permitting a conclusion as to the course of action offering the greatest probability of success. . . . The staff officer uses it to determine the influence of factors within this [his] particular field of interest on the course of action under consideration and to arrive at his recommendation to the commander.³¹

The estimate of the situation was first taught at the Army General Staff College in Langres, France, in 1917 as an orderly approach to consider factors affecting the decision.³² Later, when the General Staff College reopened

³⁰U.S., War Department, Field Service Regulations: Operations (Tentative), FM 100-5 (Washington: U.S. Government Printing Office, 1939), p. 36.

³¹U.S. Army Command and General Staff College, Staff Organization and Procedures, ST 101-5-1 (Fort Leavenworth, Kans.: The Command and General Staff College, 1964), p. 71.

³²U.S., American Expeditionary Forces, Army General

at Fort Leavenworth, Kansas, the estimate was again included as part of the curriculum.³³ However, at that time it was intended for the use of only the G2, the G3, and the commander.³⁴ Neither the requirement for a logistical estimate by the G4 nor a format for its presentation were published until it appeared in a lesson plan of the Regular Course curriculum.³⁵ Moreover, the G4 estimate did not appear in a War Department manual until 1940.³⁶

This lack of a supply estimate between 1921 and 1937 seems incongruous since the commander obviously considered the impact of supply and evacuation factors prior to making

Staff College, Organization, Administration and Miscellaneous: A.E.F., Mimeographed collection of manuscripts and lesson plans (Fort Leavenworth, Kans., College Library), Lecture 7, 7 December 1917, p. 9.

³³C. M. Bundel, Lt Col, USA, "Estimate of the Situation," Lecture given at The Army Service Schools, The General Staff School, Academic Year 1919-20, contained in The General Service Schools' Printed Pamphlets: 1919-20 (Fort Leavenworth, Kans., College Library), p. 1.

³⁴The General Service Schools, Combat Orders, pp. 82-84.

³⁵The Command and General Staff School, Regular Course, 1937-1938: G-4 Course [and] G-5 Course, Tactics & Technique of Separate Arms (Fort Leavenworth, Kans., College Library), "Supply and Evacuation--Infantry Division in Advance and Attack," Map Exercise Solution (Mimeographed), pp. 95-100.

³⁶U.S., War Department, Staff Officers' Field Manual: The Staff and Combat Orders, FM 101-5 (Washington: U.S. Government Printing Office, 1940), p. 128.

decisions. It is logically concluded, therefore, that the logistical estimate was prepared by the G4 long before it was officially designated an "after the fact" part of his duties. It is doubtful, however, that any set format was followed by the G4 in the application of the supply estimate prior to publication in 1937 of the General Staff School format, which in substance is outlined below.

--SUPPLY AND EVACUATION ESTIMATE OF THE SITUATION--

1. TACTICAL SITUATION

a. Own Forces

b. Enemy

(1) Major capabilities

(2) Minor capabilities

2. SUPPLY

a. Period considered

b. Supplies and replacements required

c. Evacuation

(1) Number of casualties

(2) Other major evacuation factors

3. MEANS AVAILABLE

a. Supplies and replacements

b. Transportation

(1) Railway

(2) Roads

(a) Highways

(b) Land transport

(c) Waterways

- c. Labor
- 4. PLAN OF SUPPLY AND EVACUATION
 - a. Plan I
 - b. Plan II
 - c. Plan III
 - d. Plan IV
 - e. More plans if required
- 5. EFFECTS OF ADVERSE CONDITIONS
 - a. Weather
 - b. Enemy
- 6. COMPARISON OF PLANS FOR SUPPLY AND EVACUATION
 - a. Plan I vs. Plan 2
 - b. Plan 3 vs. Plan I
 - c. Plan 2 vs. Plan I
 - d. Plan ____ vs. Plan ____
 - e. More comparisons as required
 - f. Recommendation of a plan to the commander³⁷

It should be noted that the G4 estimate of the situation differed markedly in format from that used by the commander and the other general staff officers at that time. Specifically omitted were such considerations as the mission statement, the situation and considerations, and other items

³⁷The Command and General Staff School, Regular Course, 1937-1938, Map Exercise Solution, pp. 95-100.

which were included in the G2 and G3 estimates. These omitted items have been gradually refined and subsequently incorporated into the present five-paragraph estimate process.³⁸

Journal.--The G4 maintained a section journal which provided information on the more important messages sent and received as well as data on periodic reports and similar facts pertaining to the section. In addition, the journal contained a brief of all instructions given by the commander to the section or by a section member while away from headquarters. The journal was maintained as a permanent record and, as such, reflected the main accomplishments of the section. This section journal, in conjunction with records and reports of other general staff sections, provided the basis for the diary which was the complete historical record of the division.³⁹ The format for preparation of the journal is presented in Appendix C.

Reports.--In addition to special reports required for various projects, the G4 submitted periodic reports (see Appendix D) to depict the status of supply within the

³⁸U.S. Army Command and General Staff College, ST 101-5-1, pp. 150-152.

³⁹The General Service Schools, Command, Staff and Logistics (Fort Leavenworth, Kans.: The General Service Schools Press, 1923), Vol. I, pp. 51-52.

division during a given period of time. The format for such periodic reports resembled the administrative order format and was likewise divided into six paragraphs. In 1936 the report was enlarged to include seven paragraphs, but the change was primarily administrative and did not add significant data. The report was supported by appendices and maps appropriate for a complete representation of the existing situation. Normally, if any part of the situation could be represented on an overlay, this was preferred. Any subheadings of the report that were not used were omitted.⁴⁰

Maps.--The situation map for the G4 section traced the lateral and rear boundaries of the division and showed the location of technical and administrative units, field and service trains, and supply units and installations. The situation map normally included pertinent data extracted from the reports of other general staff or technical and administrative staff sections. The G4 also maintained traffic circulation maps and issued them with the administrative order if required. Such maps were normally road maps and indicated the flow of traffic within a specified area.⁴¹

⁴⁰The Command and General Staff School, Combat Orders (Tentative) (Fort Leavenworth, Kans.: The Command and General Staff School Press, 1936), p. 190.

⁴¹The General Service Schools, Command, Staff and Logistics, Vol. I, p. 70E.

System of Supply

The organization of the system of supply and evacuation within the division during the time frame 1921-1939 underwent gradual but substantial changes. Likewise, the procedures governing the requisition, issue, and storage of supplies were also modified. Specifically, the G4 became the focal point for coordinating logistical support requirements for the division, the entire system of supply was refined, and standing procedures were adopted based on the lessons learned by the A.E.F. during World War I. Finally, wagons were eliminated from the infantry division and were replaced by modern vehicles.

The responsibility of the G4 for supplies during this period can be classified into two main areas: first, he was the chief supply planner for the division and, second, he was the principal coordinating staff officer for supply operations. In order to consider the major changes in supply procedures within the division, it is appropriate to discuss in general the organization of the division trains since these elements are referred to later in considering the requisition and delivery of supplies to divisional units.

Division trains.--The trains of a division were divided into three categories: combat, field, and service

trains. The composition of these trains are listed as follows:

a. Combat trains.--(1) Combat trains include all personnel, vehicles and animals employed by regiments and smaller units for transporting ammunition reserve and special equipment required during combat. In addition, they include rolling kitchens, water carts, and those vehicles required for the technical service of engineer, signal and medical troops. Combat trains normally remain with the unit to which attached and follow it into action.

b. Field trains.--(1) Field trains include all personnel, vehicles, and animals employed by headquarters, or by regiments or smaller units for the reception, transportation, and issue of the authorized allowance for baggage, rations and forage. . . . Field trains accompany their organizations unless otherwise specified in orders.

c. Service trains.--The service trains comprise:

(1) The division train, Quartermaster Corps.

(2) The Artillery ammunition train . . .

(3) The Ordnance and service companies

(4) The engineer regiment train . . .

(5) The medical regiment train . . .

9. . . . The service trains keep the combat and field trains filled. The latter trains issue the supplies to the troops . . . The service trains operate between the [army] refilling and [division] distributing points, and the combat and field trains between the service train and the troops. . . . The movement of the service train, and the combat and field trains when not with their organizations, are controlled by the division commander. When the service of any of these trains is required, the train is returned to the control of the commander of the organization to which it belongs or to the chief of the supply branch concerned.⁴²

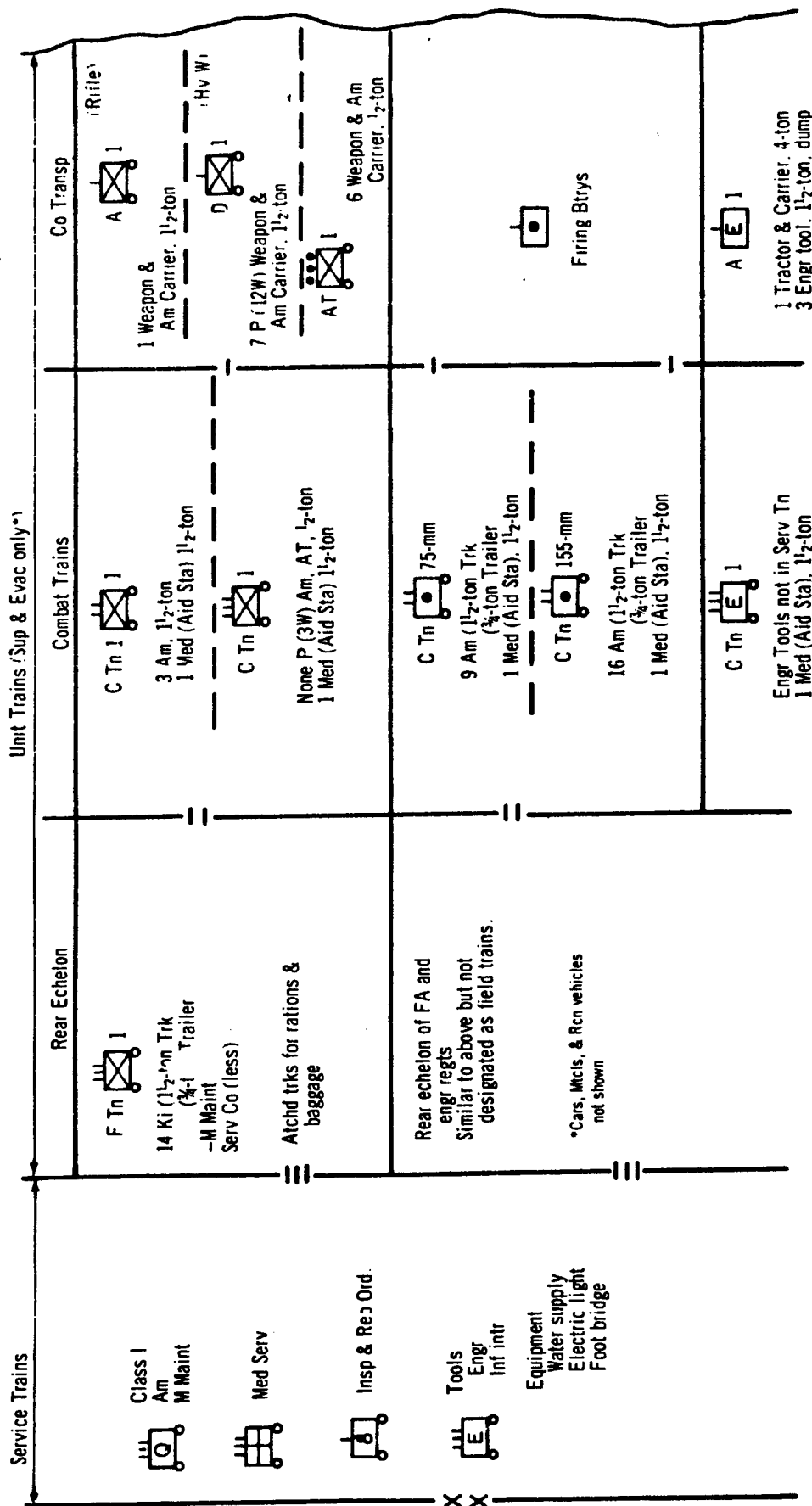
⁴²The General Service Schools, Command, Staff and Tactics (special ed.; Fort Leavenworth, Kans.: The General Service Schools Press, 1923), pp. 101-105.

Figure 9 depicts graphically the echelonment of combat, field, and service trains throughout the division area.

Classes of supply.--The classes of supply used during this period were identical to the classes used during World War I. Moreover, the category of supplies within each class remained the same. Class I still consisted of rations, fuel, and lubricants; class II, personal use items such as clothing and gas masks; class III, items authorized by tables of organization and equipment, such as arms, technical service equipment, and vehicles; and class IV, articles such as ammunition, barrier materials, and machinery. It should be added that class IV articles of supply were not covered by tables of allowances but were directly related to contemplated or current operations.⁴³

Procurement and distribution of supplies.--Class I supplies were not requisitioned in the sense of specific quantities of various items, such as pounds of meat, loaves of bread, and gallons of gasoline. More appropriately, the division quartermaster merely submitted to the Army Quartermaster a daily telegram which included a division consolidated strength report, in terms of men and animals, and an

⁴³The General Service Schools, Command, Staff and Logistics, A Tentative Text (Fort Leavenworth, Kans.: The General Service Schools Press, 1929), p. 2.



Source: The Command and General Staff School, Regular Course, 1939-1940, G-4, Vol. XVII: Fourth Section Directives (Fort Leavenworth, Kans., College Library), Map Exercise, "Supply and Evacuation--Infantry Division on the March and in Bivouac" by Maj A. R. Walk, Inf?, 24 October 1939, Chart 1, p. 7.

Fig. 9.--Infantry division trains in 1939

expenditure report, in terms of gasoline and oil, for a like period of time. An information copy of this daily telegram was furnished the division G4. Distribution was then effected in any one or combination of three ways. First, regiments could pick up daily rations and petroleum requirements directly from the railhead after sorting by the division quartermaster. Second, quartermaster elements could effect pickup at the railhead and deliver supplies to the quartermaster trains location, where requesting units would accomplish pickup. Third, unit delivery could be made by quartermaster regiment transportation to the field trains of the unit or to the unit location. Although the situation dictated which system would be used at any specific time, it was agreed that the first method, railhead distribution, would be used the most.⁴⁴

Classes II, III, and IV supplies (less ammunition) were requisitioned by the appropriate technical service officer of the division after consolidating requirements from all divisional units. Requisitions were forwarded to the army supply officer, who, in turn, authorized the issue

⁴⁴The Command and General Staff School, Regular Course, 1939-1940, G-4 (Fort Leavenworth, Kans., College Library), Vol. XVII, Conference, "Class I Supply--Infantry Division" by Maj W. F. Campbell, QMC, 23 October 1939, typewritten pp. 1-16.

from appropriate army depots. The division G4 was not directly involved with the requisitioning of these classes of supply, but the special staff officers kept him informed of the supply activities of the command and of the support received from higher echelons. The reasoning for this is given in a lesson plan of the curriculum taught at The Command and General Staff College in 1939 which stated:

If the service of supply is not satisfactory, then of course the [the commander and the G4] will intervene. . . . The commander and his general staff, however, are too busy with other affairs to take the time to approve or disapprove the thousand and one different supply items included in the requisitions submitted by their subordinate echelons.⁴⁵

Classes II, III, and IV stocks (less ammunition) were drawn from army depots and distributed through class I distribution channels. Under certain conditions, however, particularly with field fortification material, distributing points were designated and established for issue of these items of supply.⁴⁶

Ammunition supply continued to be a responsibility split between the ordnance officer for small arms ammunition

⁴⁵ Ibid., Lecture, "General Principles of Supply" by Lt Col E. F. Williams, CE, 26 September 1939, typewritten p. 19.

⁴⁶ U.S., War Department, Staff Officers' Field Manual, Part II: Technical and Logistical Data (Washington: U.S. Government Printing Office, 1932), p. 77.

and the artillery commander for artillery ammunition. Divisional units submitted periodic ammunition expenditure reports to both the ordnance officer and the artillery commander as required for the type ammunition requested. Consolidated reports were prepared separately and a copy of each was submitted to the division G4.

The small arms expenditure report was then transmitted by the division ordnance officer to the army ordnance officer who, in turn, processed the report to the army G4. From this point forward, the G4 at all echelons were responsible for the allocation of ammunition. The corps G4 allocated the small arms ammunition to the division G4 and an information copy of the allocation report was sent to interested ordnance officers at each echelon. The distribution of this type ammunition was accomplished in two steps. First, the ordnance officer, using quartermaster transportation resources, effected pickup of ammunition from the army depot and established distributing points throughout the division area, usually on the basis of one per infantry brigade. Second, the combat trains of the infantry unit then loaded the ammunition and made delivery to units located forward of the distributing point.

The artillery ammunition expenditure report and the distribution procedures for the artillery ammunition were

handled differently. The division artillery commander submitted his report to the corps artillery officer who, in turn, allocated the ammunition to the division artillery officer, with information copies furnished the G4's concerned. The brigade artillery trains arranged for pickup of artillery ammunition from army depots and normally established one distributing point, the location of which was subject to the approval of the G4, for subsequent pickup by the combat trains of the battalion. The battalion combat trains formed the link between the ammunition trains, which in effect were division ammunition trains, and the firing battalions.⁴⁷

⁴⁷Ibid., pp. 77-85.

CHAPTER IV

DIVISION G4 DURING THE PERIOD 1940-1945

Reorganization of Army Divisions

As a result of the "triangular" division test conducted in 1937 by the 2d Infantry Division, a favorable report recommending adoption of the new division structure was submitted to the War Department. Basically, the test used three regiments directly under division control and eliminated the intervening brigade headquarters.¹ It was 1940, however, before the War Department directed that reorganization be effected. Nine Regular Army divisions were ordered to reorganize under the "triangular" concept by 1 October 1940. The National Guard divisions, in training prior to the outbreak of World War II, were still organized under the "square" concept and did not effect reorganization until the first quarter of 1942. Although several minor changes occurred in the strength and composition of certain support units between 1940 and 1942, the division was

¹U.S., War Department, "Report of the Field Service Test of the Proposed Infantry Division" (Washington: Army War College, 1937), p. 1. (Mimeographed; [U.S. Army War College Library File 94-20 (ONLY)].)

finally organized in 1943 as shown in Figure 10.²

The armored division also underwent substantial changes in both the number and type units authorized during the early stages of World War II. On the basis of comparison,³ it was 1942 before the table of organization was stabilized in the force structure which characterized it during its employment in the remainder of the war. The major combat and service units of the armored division in 1942 are shown in Figure 11.

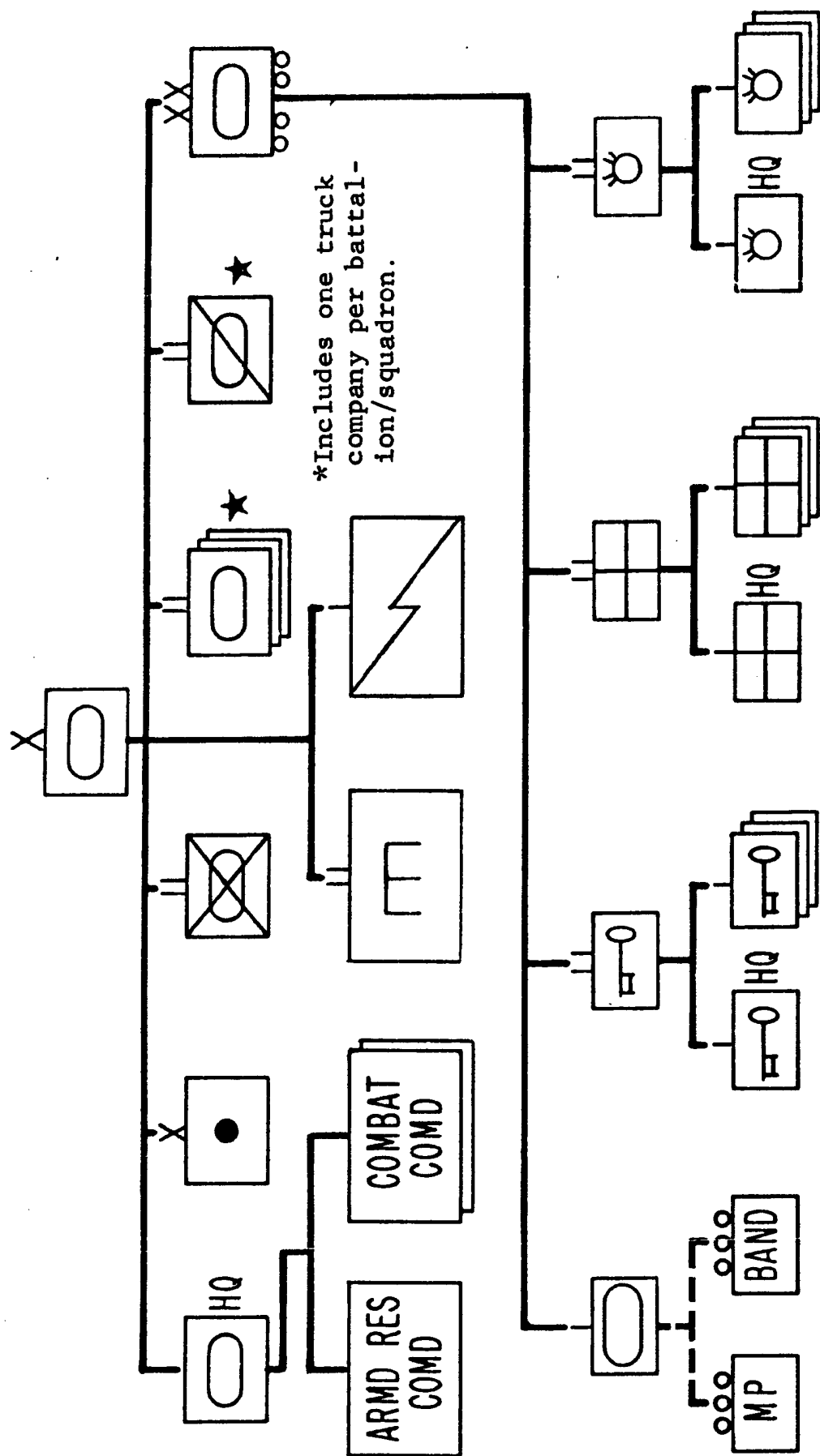
The airborne division was used extensively in both the European and Asiatic Theaters. This unit, like the infantry and armored divisions, also experienced organizational difficulties that were not completely stabilized until 1942. The organization of major elements of the airborne division is shown in Figure 12.⁴

Other division organizations used during World War

²U.S., Department of the Army, Historical Division, Organization of Ground Combat Troops (Washington: U.S. Government Printing Office, 1947), pp. 11-12.

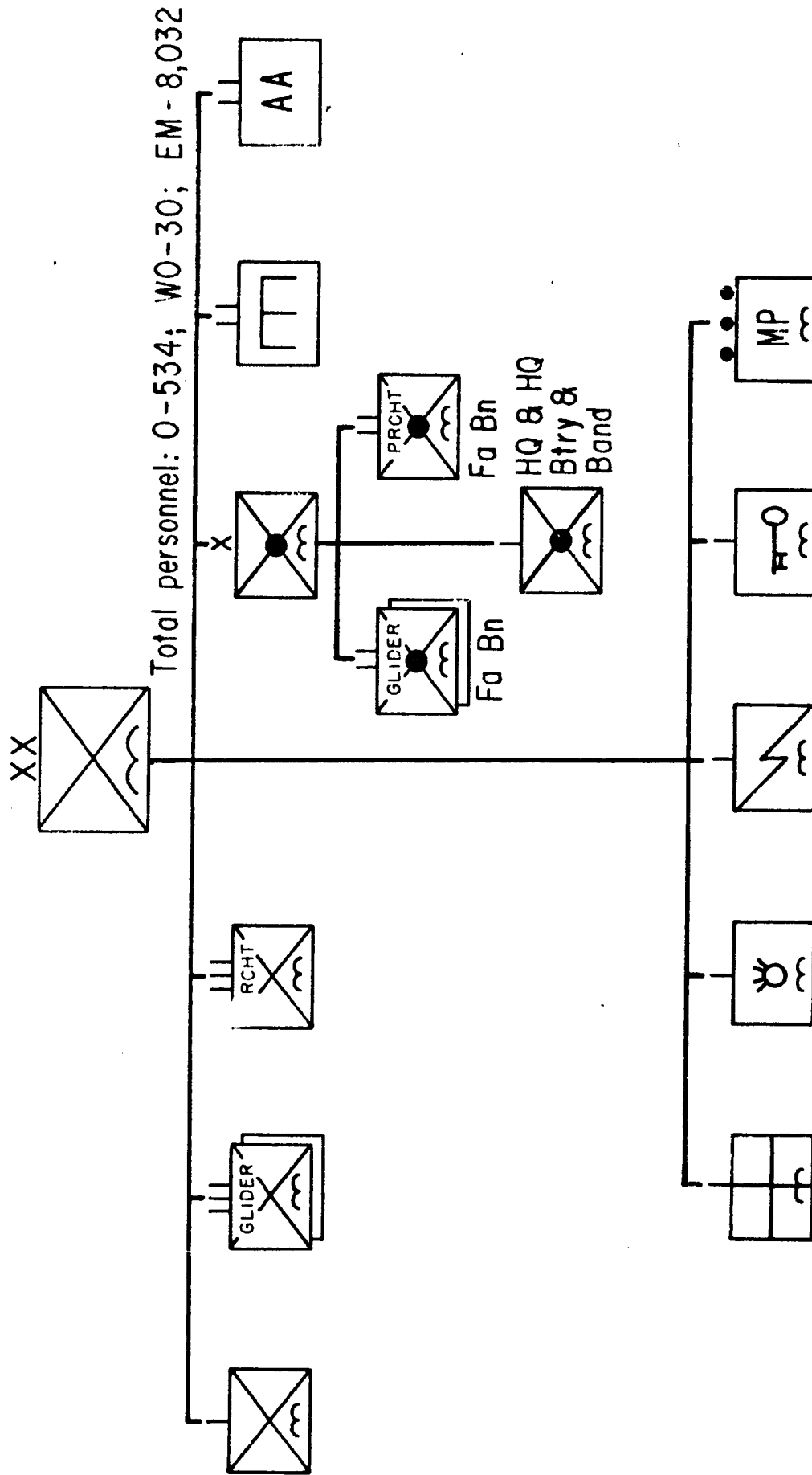
³U.S., War Department, Staff Officers' Field Manual: Organization, Technical and Logistical Data, FM 101-10 (Washington: U.S. Government Printing Office, 1941), p. 194; and U.S., War Department, Staff Officers' Field Manual: Organization, Technical and Logistical Data, FM 101-10 (Washington: U.S. Government Printing Office, 1943), p. 119.

⁴U.S., War Department, Staff Officers' Field Manual (1943), p. 130.



Source: U.S., War Department, Staff Officers' Field Manual: Organization, Technical and Logistical Data, FM 101-10 (Washington: U.S. Government Printing Office, 1943), p. 119.

Fig. 11.--Major combat and supply elements of the armored division in 1942



Source: U.S., War Department, Staff Officers' Field Manual: Organization, Technical and Logistical Data, FM 101-10 (Washington: U.S. Government Printing Office, 1943), p. 130.

Fig. 12.--Major combat and supply elements of the airborne division in 1942

II included both the light division and the mountain division. However, both organizations were variations of the standard infantry division and were not treated separately. A comparison of the division organizational charts indicated that there were certain basic differences within the service units of each type division. The principal differences were in the organization and function of the division ordnance and medical units and are discussed below.

Ordnance Light Maintenance Company.--The Ordnance Light Maintenance Company of the infantry division was composed of a headquarters section, a supply section, an armament platoon, and an automotive platoon. The armament platoon, which was divided into an artillery section and a small arms section, handled the maintenance of the ordnance equipment. The repair of motor vehicles was accomplished by the automotive section. The division ordnance officer was not the company commander, but he was assigned by a separate table to the division headquarters ordnance section.⁵

Ordnance battalion.--Maintenance requirements in the armored division required the assignment of an ordnance battalion primarily because of the large number of wheeled and

⁵The Command and General Staff School, 11th G. S. Course, Nov. 1942 - Jan. 1943, Vol. II: Sch. No. 12 to 52 (Fort Leavenworth, Kans., College Library), "Ordnance Section--Division Special Staff," Sch. 52-V-11-GS, pp. 1-5.

tracked vehicles. This battalion consisted of a headquarters and three ordnance companies. The ordnance companies were organized into a headquarters platoon and three maintenance platoons. The headquarters company furnished backup maintenance requirements for the ordnance companies, to include furnishing contact and recovering parties as required. In the infantry division this service was provided by the medium ordnance companies located at corps. The commander of this battalion was also the division ordnance officer.⁶

Medical battalion.--The medical battalion of the infantry division consisted of a headquarters detachment, three collecting companies, and a clearing company. The collecting companies of the battalion were organized to support each of the three combat teams of the division. They were normally located approximately one mile to the rear of the frontline and provided direct support to the infantry regiments and other units located in the area. Patients were evacuated from the collecting companies to the clearing company by ambulance relay. The clearing company, located six to eight miles to the rear, either returned those fit for duty to the parent unit or requested evacuation

⁶Ibid., pp. 6-8.

transfers to the medical unit of a higher echelon. The medical battalion commander in the infantry division was also the division surgeon.⁷

The medical battalion of the armored division was composed of a headquarters and headquarters company and three medical companies, each of which consisted of a collecting platoon and a clearing platoon. The provision for establishing both a collecting and a clearing platoon in each company is primarily to provide complete coverage for each committed major combat element of the division during rapid advance and to insure that each type coverage was available during periods when the division was widely dispersed. The medical battalion commander in the armored division was also the division surgeon.⁸

First Test of Division G4 Concept: World
War II, 1941-1945

Organization of the Division Staff

The organization of the division staff under the "triangular" concept remained essentially the same, for the

⁷The Command and General Staff School, 16th G. S. Course, Nov. 1943 - Jan. 1944, Vol. III: Sch. 63 to 83 (Fort Leavenworth, Kans., College Library), "Our System of Evacuation in the Combat Zone," Sch. 112-W-13-GS-C, pp. 20-23.

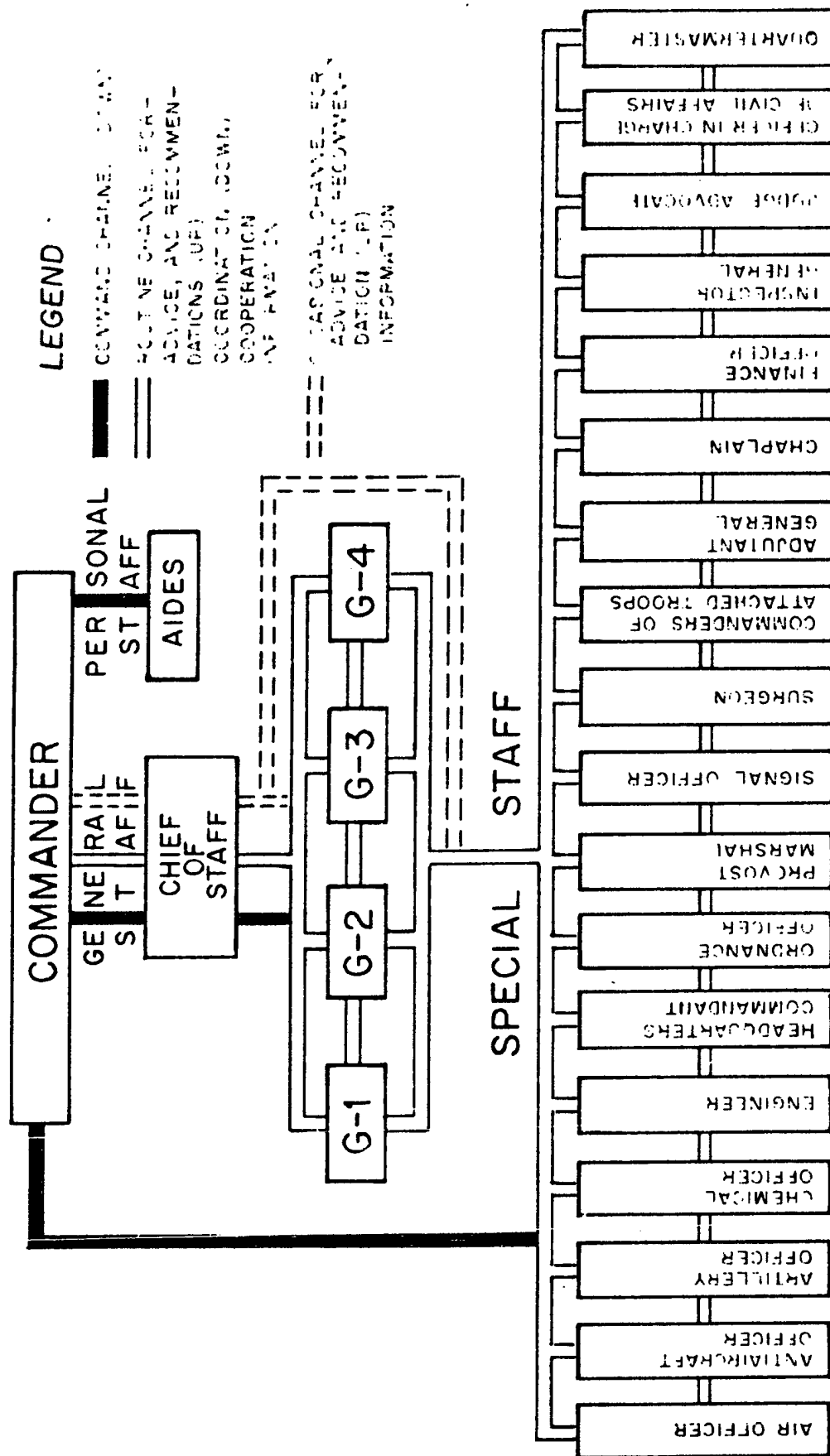
⁸Ibid., "Armored Division--Supply and Evacuation," Sch. 72B-W-16-GS, p. 17.

most part, as that which existed under the "square" division. Figure 13 is an organizational chart showing the 1940 structure of the division staff. This staff was subsequently modified by the addition of a civil affairs officer, an anti-tank officer, and a special services officer in 1943.⁹

The organization of the division G4 section was based first on personnel available and second on the work to be accomplished. At corps and higher headquarters, separate subsections were normally authorized to coincide with the functional areas of administration, construction, evacuation, supply, and transportation.¹⁰ Although the same type functionalization was not feasible within the spaces allocated for the division G4 section, the G4 of the 2d Armored Division did organize his section on a functional basis. Other division organizations noted were not as sharply defined, and the G4 officers assigned personnel within their sections to whatever tasks were most critical at the time. Since the organization of the 2d Armored Division was the only example of the functional concept, it is worthy of

⁹U.S., War Department, Staff Officers' Field Manual: The Staff and Combat Orders, FM 101-5 (with Changes No. 7 (3 February 1943); Washington: U.S. Government Printing Office, 1940), pp. 18-19.

¹⁰Charles C. Peterson, Lt Col, GSC, G-4 History: European Theater of Operations (St. Severin, Belgium: Headquarters 2d Armored Division, 1944), p. ii.



Source: U.S., War Department, Staff Officers' Field Manual: The Staff and Combat Orders, FM 101-5 (with Changes No. 7 (3 February 1943; Washington: U.S. Government Printing Office, 1940), p. 2.

Fig. 13.--Organization of division staff in 1940

comment. The G4 of the 2d Armored Division, which arrived in France on 9 June 1944 and participated in major combat operations in both France and Germany, found the organization of his section worked most efficiently when organized into the functional areas of administration and transportation. The administrative section consisted of one major, one warrant officer, and one master sergeant. The transportation section was composed of one major, one captain, and one warrant officer. In addition, a coordination line was depicted to extend from the G4 to the following special staff officers: quartermaster, ordnance, medical, signal, engineer, and chemical.¹¹ This coordination line, however, should not be considered peculiar to the 2d Armored Division since these officers were the principal special staff members the G4 supervised and coordinated with in all divisions.

Throughout the war additional personnel were gradually authorized for the G4 section, and the authorized strength of the division G4 increased from five spaces in 1940 to eight spaces in 1945.¹² Similar gains accrued to

¹¹Ibid.

¹²This fact was determined by a comparison of The Command and General Staff School, 1st Special Class, 1940-1941, Vol. V: Sch. 35 - 52 (Fort Leavenworth, Kans., College Library), Sch. No. 35-U, pp. 5-6; and U.S., War Department, Headquarters, Infantry Division, TOE 7-1 (Washington: U.S. Government Printing Office, 1945), pp. 2-4.

the armored division.¹³ The addition of an automotive officer space in 1943¹⁴ is attributed to the complete changeover to motorization in the infantry division and to both motorization and mechanization in the armored division. The increased importance of transportation also established a requirement for another assistant G4 in all divisions to coordinate the transportation function on a division-wide basis. This additional officer space was authorized in 1945.¹⁵ Table is a recapitulation of the officer and enlisted spaces authorized for the G4 section of the infantry, armored, and airborne divisions throughout World War II.

Although the total personnel strength of the section had increased from five in 1940 to eight in 1945,¹⁶ field reports generally indicated that additional personnel were

¹³This fact was determined by a comparison of The Command and General Staff School, 1st Special Class, 1940-1941, Vol. V: Sch. 35 - 52 (Fort Leavenworth, Kans., College Library), Sch. No. 35-U, pp. 5-6; and U.S., War Department, Headquarters, Armored Division, TOE 17-1 (Washington: U.S. Government Printing Office, 1945), Changes No. 3.

¹⁴The Command and General Staff School, 11th G. S. Course, II, Sch. No. 10-V-9-C, pp. 5-6.

¹⁵U.S., War Department, Headquarters, Infantry Division, p. 2; and U.S., War Department, Headquarters, Armored Division, Changes No. 3.

¹⁶The Command and General Staff School, 1st Special Class, 1940-1941, V, Sch. No. 35-U, pp. 5-6; and U.S., War Department, Headquarters, Infantry Division, pp. 2-4.

TABLE 4

DIVISION G4 OFFICE ORGANIZATION

Year	Authorized Personnel	Position
Infantry Division ("Triangular" Concept)		
1940 ^a	1 Lieutenant Colonel or Major	G4
	1 Captain	Assistant G4
	1 Technical Sergeant	Chief Clerk
	2 Privates	Clerk-Stenographer
1943 ^b	1 Lieutenant Colonel or Major	G4
	1 Captain	Assistant G4
	1 Captain	Automotive Officer
	1 Technical Sergeant	Chief Clerk
	2 Privates	Clerk-Stenographer
1945 ^c	1 Lieutenant Colonel	G4
	1 Major	Assistant G4
	1 Major	Asst G4 (Transportation)
	1 Warrant Officer	Motor Transport Officer
	1 Master Sergeant	Chief Clerk
	1 Staff Sergeant	Assistant Chief Clerk
	1 Enlisted Man	Stenographer
	1 Enlisted Man	Clerk-Typist

^aThe Command and General Staff School, 1st Special Class, 1940-1941, Vol. V: Sch. 35 - 52 (Fort Leavenworth, Kans., College Library), Sch. No. 35-U, pp. 5-6.

^bThe Command and General Staff School, 11th G. S. Course, Nov. 1942 - Jan. 1943, Vol. II: Sch. No. 12 to 52 (Fort Leavenworth, Kans., College Library), Sch. No. 10-V-9-C, pp. 5-6.

^cU.S., War Department, Headquarters, Infantry Division, TOE 7-1 (Washington: U.S. Government Printing Office, 1945), pp. 2-4.

TABLE 4--Continued

Year	Authorized Personnel	Position
Armored Division		
1940 ^a	1 Lieutenant Colonel	G4
	1 Lieutenant Colonel	Assistant G4
	1 Technical Sergeant	Chief Clerk
	1 Sergeant	Record Clerk, Stenographer
	1 Private	Stenographer
1943 ^b	1 Lieutenant Colonel	G4
	1 Lieutenant Colonel	Assistant G4
	1 Captain	Automotive Officer
	1 Master Sergeant	Chief Clerk
	1 Technical Sergeant	Records Clerk
	1 Private	Stenographer
	1 Private	Clerk
1945 ^d	1 Lieutenant Colonel	G4
	1 Major	Assistant G4
	1 Major	Asst G4 (Transportation)
	1 Warrant Officer	Motor Transport Officer
	1 Master Sergeant	Chief Clerk
	1 Enlisted Man	Stenographer
	1 Enlisted Man	Clerk-Typist
Airborne Division		
1944 ^e	1 Lieutenant Colonel	G4
	1 Major	Assistant G4
	1 Major	Air Resupply Officer
	2 Lieutenants	Liaison Officer
	1 Warrant Officer	Motor Transport Officer
	1 Technical Sergeant	Maintenance Sergeant
	1 Private	Clerk
	1 Private	Stenographer

^dU.S., War Department, Headquarters, Armored Division, TOE 17-1 (Washington: U.S. Government Printing Office, 1945), Changes No. 3.

^eU.S., War Department, Headquarters, Airborne Division, TOE 71-1T (with Changes No. 1 and 2 (1945); Washington: U.S. Government Printing Office, 1944), pp. 2-4.

required to accomplish all functions properly. For example, the G4 of the 102d Infantry Division reported that there was a further requirement for "a more generous allocation" of personnel in the G4 section of the infantry division in order to accomplish their combat mission.¹⁷

Moreover, it will be shown that specialized operations habitually required augmentation of the G4 staff. The detailed planning and coordination required for amphibious and mountain operations, combined with the G4 responsibility for organizing and adjusting the traffic control headquarters, were specifically mentioned as actions which required additional personnel. These operations are discussed in detail in subsequent sections of this chapter.

The 1940 Staff Officers' Field Manual reiterated the normal echelonment of the division headquarters into a forward and rear echelon. There were, however, some changes in the composition of the staff group that comprised each echelon. Specifically, the air officer, headquarters commandant (who was the commanding officer of special troops), anti-aircraft officer, liaison officers, provost marshal, surgeon, and commanders of attached units were added to the forward

¹⁷ Joseph B. McGee, Maj, USA, "Combat Observations of an Infantry Division G-4," Military Review, XXV, No. 12 (March 1946), 38.

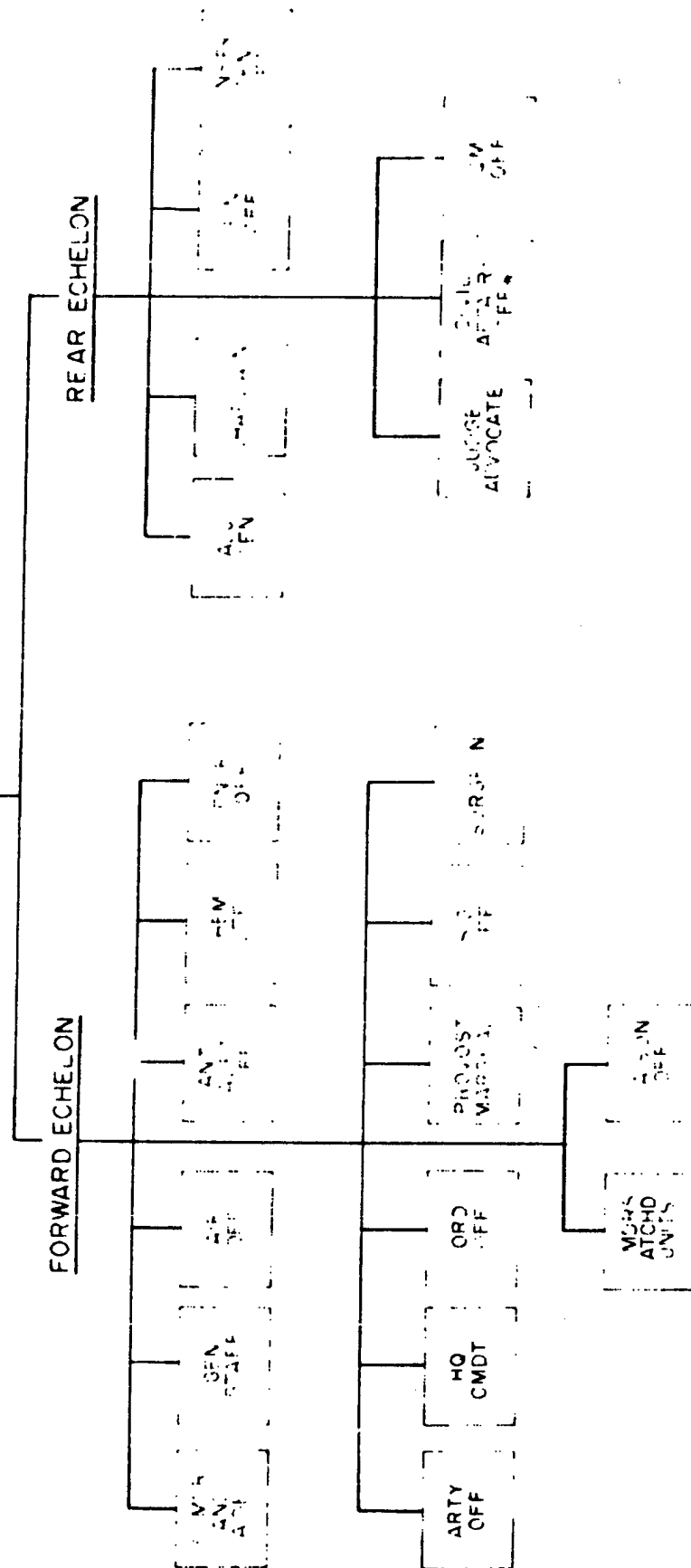
echelon. Changes in the staff composition of the rear echelon provided for the addition of a civil affairs officer on an "as required basis" to advise the commander on subjects pertaining to the administration of civil affairs in a theater of operations. Also, the ordnance officer was switched from the rear echelon to the forward echelon.¹⁸ Figure 14 depicts the normal echelonment of the division headquarters as organized in 1940. This echelonment was in effect throughout the w. r.

Although many divisions used this technique during combat operations, there were noted deviations. For example, all divisions operating in Europe under Fifth Army had more satisfactory results by organizing the division headquarters into three separate echelons with the G4 agencies represented at each. This idea was originally conceived during the Sicilian Campaign and was refined in subsequent operations. Since this echelonment of the division headquarters was a successful and popular operation, and since the location of principal special staff officers is of primary concern to a G4, it is appropriate to discuss the "triple" echelonment under combat conditions.

One of the basic reasons for the establishment of

¹⁸U.S., War Department, Staff Officers' Field Manual (1940), pp. 18-19.

DIVISION HEADQUARTERS



* PROVIDED AS REQUIRED

Source: U.S., War Department, Staff Officers' Field Manual: The Staff and Combat Orders, FM 101-5 (Washington: U.S. Government Printing Office, 1940), pp. 17-19.

Fig. 14.--Echelonnement of division headquarters in 1940

three separate echelons was the enormous size of the headquarters itself. Moreover, the continual additions of large numbers of relatively permanent small detachments and the G4 bands of observers and captured enemy material teams are but two examples of personnel crowding a headquarters that was already saturated and too unwieldy for one or even two installations. The three echelons were a division command post, a rear echelon, and an administrative center. The G4, as noted above, had agencies at each echelon.¹⁹

The command post normally consisted of the commanding general and his personal staff, the chief of staff, G2, G3, G4, the assistant division engineer, and other special staff officers as required.²⁰

The rear echelon location was controlled by the G4 and consisted of the G1, chemical warfare section, division surgeon and assistant only, a representative of the adjutant general, a part of the signal company, G2 auxiliary units, and support from headquarters company as required to administer the group. Normal location was along the main supply route, about three to five miles behind the command post.²¹

¹⁹George H. Revelle, Jr., Maj, Inf, "Under Fifth Army a Division G-4 Operates," Trials and Tribulations of an Army G4 (APO 777: Headquarters, 15th Army Group (OVHD), 1944), p. 2. [Fort Leavenworth, Kans., College Library.]

²⁰Ibid.

²¹Ibid., p. 3.

The administrative center exact location was controlled by the G1. Normally it was wherever suitable buildings were available, sometimes as far as fifty miles behind the frontlines but rarely within the corps boundary. The quartermaster purchasing and contracting officer and a portion of the division surgeon's section represented the G4 agencies. Other agencies were the special services officer, adjutant general's section, army postal units, and Red Cross representatives. To amplify the organization of G4 agencies under this concept, the division transportation officer was located separately along the main supply route or with the quartermaster; the quartermaster was located with the quartermaster company; signal supply with the signal company; medical supply with the medical battalion; and the graves registration platoon with the quartermaster.²²

Variations of the above procedures within Fifth Army divisions were based upon the emphasis given a particular situation or operation. For example, in one division the G4 was at the rear echelon but was required to know the situation at the command post, his normal location during the more important periods of activity. Another instance of variation involved a pursuit type operation in which truck

²²Ibid.

transportation was at a premium. It was expedient that the transportation officer be at the command post until the operation was completed.²³

Duties and Responsibilities

A comparison of the G4 duties listed in the 1928 and 1940 editions of the Staff Officers' Field Manuals²⁴ showed an ever-increasing number of functions assigned to the G4. Specifically, the following additional responsibilities were assigned in the 1940 edition of the manual: location of supply, evacuation, and maintenance units; movement of supplies by air; recommending the allocation of small arms and equipment, protective measures for lines of communication and rear establishments, and rear boundaries and rear echelons of headquarters; construction and maintenance of railways; acquisition and improvement of airplane bases; and authentication of the administrative order.²⁵ A recapitulation of all duties of the division G4 in 1940 is contained

²³Ibid.

²⁴U.S., War Department, Staff Officers' Field Manual (1940), pp. 15-16; and U.S., War Department, Staff Officers' Field Manual: United States Army, Chap. I: Staff Principles and Functions (Washington: U.S. Government Printing Office, 1928), pp. 14-15.

²⁵U.S., War Department, Staff Officers' Field Manual (1940), pp. 15-16.

in Appendix E.

The new responsibilities in the preceding paragraph need no explanation and it is clear that they were, for the most part, previous responsibilities of other general or special staff officers or outgrowths of basic responsibilities which the G4 had already been assigned. The only exception to this generalization was in the responsibility of the movement of supplies by air. This occurred basically because of the ever-increasing potential of the Army Air Corps immediately prior to World War II and, in reality was an innovation in logistics to be recognized and planned for by the G4. The authentication of the administrative order, previously the responsibility of the chief of staff, was, then, the responsibility of the G4 in the same manner that the authentication of the operations order was the responsibility of the G3.²⁶

It is appropriate at this point to recapitulate the total responsibilities of the G4 and to separate these responsibilities into the broad functional areas of supply, evacuation, transportation, services, and miscellaneous. This functionalization of G4 areas of interest, which is

²⁶The Command and General Staff School, Command and Staff Principles (Tentative) (Fort Leavenworth, Kans.: The Command and General Staff School Press, 1937), p. 148.

shown in Table 5, both simplifies and facilitates identification of the G4 duties in subsequent references and discussions of his role during World War II.

Administrative Procedures

Administrative orders and instructions.--Overlays, normally issued as annexes, were used in conjunction with the administrative order as a means of clarifying and shortening it. The information shown on the administrative overlay consisted of all or part of the following items: supply and evacuation installations, bivouacs of trains elements, rear echelon, straggler line, collecting points for stragglers and prisoners of war, main supply routes, the light line (or line forward of which no lights would be shown), and tactical details as necessary.²⁷

A review of numerous administrative orders published by division G4's during World War II indicated extensive use of the overlay to identify the location of supply installations, main supply routes, and traffic control points their division's area of influence. In many instances there was only a published overlay that contained not only the graphic illustrations but, in effect, the entire written

²⁷U.S., War Department, Staff Officers' Field Manual (1940), pp. 139-140.

TABLE 5

RECAPITULATION OF G4 FUNCTIONAL AREAS IN 1940^a

<u>Functional Area</u>	<u>Responsibility</u>
Supply	Determined requirements Distributed supplies Developed standards for new items Collected salvaged and captured materiel
Evacuation and Hospitalization	Controlled with respect to men and animals
Transportation	Governed for units, personnel, and supplies by land, air, or water Movement and traffic control Operation of movements (with G3)
Services	Requirements, allocation, and movement of service troops Construction of facilities and installations Maintenance and repair of facilities Sanitation Maintenance and repair of supplies Real estate Fiscal activities, except payment of troops and civilians Property accounting Recommendations as to training of service troops (with G3)
Miscellaneous	Unit rear boundaries (with G3) Civil affairs supplies Planning future operations Orders Reports Records of supply matters

^aSource: "Duties of a Division G-4," Infantry School Quarterly, XXXII, No. 1 (January 1948), 124-142.

portions of the administrative order. In either respect, whether an overlay accompanied the administrative order or whether the entire order was superimposed on an overlay, the order followed the format outlined in the 1940 edition of Field Manual 101-5. Except for minor changes within each paragraph, the administrative order contained the same information required in 1924 and cited in Appendix B. There were still six paragraphs: supply, evacuation, traffic, service troops and trains, personnel, and miscellaneous.²⁸ The exceptions noted in the subsections of the format for the administrative order in 1940 when compared to the 1924 format (see Appendix B) are listed below.

1. A credit system was used for ammunition supply to subordinate units of the division. This system, which was later to be called "the available supply rate," allocated credits in terms of types, calibers, and rounds that would be issued to divisional units. This exception was found in paragraph 1.

2. Designation of main supply routes was added to paragraph 2.

3. Information on strength reports and replacements was prepared by the G1 and inserted as part of paragraph 3.

²⁸U.S., War Department, Staff Officers' Field Manual (1940), pp. 139-140.

4. Information pertaining to the location of the rear boundary, the hour and date for the opening of the rear echelon, and protected areas were standard items covered under the "miscellaneous" paragraph.²⁹

The format for administrative orders throughout World War II disclosed an almost "verbatim" adherence to the manual. Moreover, the method and frequency of publishing such orders were in accordance with the 1940 doctrine, which provided for the issuance of a complete order initially with subsequent orders containing items to be changed. Such subsequent orders were either issued as changes to the basic administrative order or as fragmentary orders.³⁰

Both methods were observed in research of selected division combat operations. An example of the use of fragmentary administrative orders was observed in the operations of the 77th Infantry Division in Leyte, Philippine Islands. The fragmentary order was published to provide for a change in the mail pickup and in the type and method of resupply of class I for divisional units.³¹ Changes to the

²⁹U.S., War Department, Staff Officers' Field Manual (1940), pp. 98-100.

³⁰U.S., War Department, Staff Officers' Field Manual (1940), p. 47.

³¹77th Infantry Division, "Fragmentary Admin Order No. 7," Administrative Orders: Leyte (Valencia, Leyte,

administrative order were also used frequently during combat operations. The 101st Airborne Division on one occasion published seven changes to an administrative order during a three-week period in which it functioned as part of VI Corps advance into Germany.³² The 101st Airborne Division also provided an example of a complete overlay type administrative order during a later stage of the same operation in which only the minimum essential information was published.³³ Regardless of how changes to the administrative order were issued, the paragraph number of the basic six paragraphs was always used. As an example, the 77th Infantry Division Fragmentary Order No. 7, cited above, had only two paragraphs, but these paragraphs were numbered 1 and 5 to conform with the basic format.

Other type administrative orders were so lengthy that separate annexes and inclosures were required. One of the most complete orders of this type was published by the 41st Infantry Division during the amphibious assault on the

P. I.: 77th Infantry Division, 1944. [Fort Leavenworth, Kans., College Library.]

³²101st Airborne Division, Headquarters, "Admin Order No. 5 (29 Jan 1945) with Change 7 (17 Feb 1945)," Administrative Orders [1945]. [Fort Leavenworth, Kans., College Library.]

³³101st Airborne Division, Headquarters, "Admin Order No. 6 (31 Jan 1945), Ibid."

Palawan Province in the Philippine Islands. The body of the order consisted of six pages and included three inclosures and nine annexes that dealt with the operational plans and services of the quartermaster, ordnance, medical, engineer, chemical warfare, signal, personnel, civil affairs, and transportation officers.³⁴

Standing operating procedures.--Standing operating procedures (SOP) include those features of operations which address themselves to a regular or definite pattern without loss of effectiveness. Such procedures were used by virtually all American units during World War II. The first Staff Officers' Field Manual to mention SOPs was the 1940 edition, which advocated that an SOP be prescribed for each type unit but did not delineate a uniform format. The purpose of the SOP was threefold: to simplify, abbreviate, and expedite combat orders, both in preparation and transmission; to reduce confusion and to minimize mistakes; and to facilitate and expedite combat operations.³⁵ The SOP included not only tactical considerations but also administrative and logistical procedures applicable to the G4.

³⁴41st Infantry Division, Adm O 4 To Accompany FO 9 (APO 41: Headquarters 41st Infantry Division, 1945.) [Fort Leavenworth, Kans., College Library.]

³⁵U.S., War Department, Staff Officers' Field Manual (1940), p. 34.

A condensed form of the first six sections of the SOP format shown in the 1940-41 curriculum of The Command and General Staff School is presented in Appendix F. Section VII of this appendix, "Administration," is extracted verbatim since it represents the principal area of G4 interest.

A review of SOPs published by divisions during World War II showed a marked similarity to the 1941 outline taught at The Command and General Staff School. Specifically in the European Theater, the SOP of the 1st Infantry Division contained the basic 29-paragraph format shown in Appendix F. Some changes, however, were incorporated, such as information on aviation requests, air defense, and rear echelon organization. Additionally, the major subsections were reduced from seven to four: general, intelligence, operations, and administration. The following changes were noted within the section on administration:

1. Class I. Provisions were made for reserve rations to be held at the ration dump. Expendable supplies, beginning with the first issue of rations, were furnished weekly. Ration and kitchen fuels, based on strength returns of preceding days, were drawn daily. The responsibility for establishing water points was transferred from the quartermaster commanding officer to the engineer battalion.

2. Classes II and IV. Units drew classes II and IV supply, based on requisitions submitted to the quartermaster, from the ration dump.

3. Class III. Reserve of class III was increased from five gallons to ten gallons.

4. Class V. The division ammunition officer (DAO) operated in the vicinity of the forward echelon service section of the division command post (as opposed to establishing an ammunition control point along the main supply route or at the ammunition dump).

5. Medical supply. There was informal transfer between medical units from front to rear.

6. Evacuation. The G4 approved sites for collecting stations.

7. Salvage. Salvage collection was a command responsibility. Empty vehicles returning to the rear were used for transporting salvage to the collecting point, which was usually in the vicinity of the ration dump.

8. Ordnance Light Maintenance Company. The Ordnance Light Maintenance Company was located from three to seven miles to the rear of frontline units and was responsible for third echelon maintenance of armament and vehicles, establishing a salvage point for armament and vehicles, furnishing replacement and spare parts, and evacuating armament

for fourth echelon maintenance and motors for fifth echelon maintenance.

9. S4 periodic reports. A system of daily periodic reports was established for each unit authorized an S4. This report contained information concerning ammunition, transportation, evacuation, salvage and captured material, and miscellaneous activities.

10. Graves registration and burials. This portion of the SOP contained instructions on assembly of the dead to include enemy, cemeteries, identification, personal effects and government property, and instructions for the graves registration officer. Such officers were designated by each battery or company size unit. At battalion or regimental level, the chaplain was normally designated as the graves registration officer. The normal personnel attachment to the division for accomplishing the graves registration and burial function included one noncommissioned officer and two enlisted men for each of three combat teams, eight enlisted men for the division collecting point, and one officer and ten enlisted men for operation of the division cemetery.³⁶

While it appears that there were substantial changes

³⁶ Army Ground Forces, "SOP of a U. S. Infantry Division [1st Infantry Division]" (Washington: Headquarters, Army Ground Forces, 1944.) [Fort Leavenworth, Kans., College Library.]

between the 1941 and 1944 SOPs, such is not the case. The remarks above concerning the 1st Infantry Division SOP were largely an expansion and/or amplification of the basic fundamentals cited in the SOP as taught in the school curriculum of the 1940-41 academic year (see Appendix F).

Transportation and traffic control.--Transportation within the division was accomplished by using vehicles organic to the division and on occasions by the attachment of quartermaster truck companies for specific missions. Transportation, or rather the lack of transportation, was the most common problem noticed on the numerous after action reports of all division G4's and in particular those of the infantry divisions. The control of transportation and the associated problem of traffic control were a G4 responsibility. Since the requirements for transportation seldom met the needs of the system, it became necessary to control the transportation assets of the division at the highest level, the general staff level. However, even an efficient centralized control system did not completely solve the problem.

One division G4 was "hard pressed" to meet even minimum transportation requirements at any time. The G4 of the 102d Infantry Division reported that there was a shortage in transportation from the time the division landed in France

to its defense of the Elbe River in Germany. He remarked that while this shortage of transport capability varied depending on the tactical situation, there was never a condition which completely eliminated this problem. Even normal transport requirements taxed the organic capabilities. The G1 needed vehicles to take troops to rest and recuperation centers or for baths; the G2 required vehicles for moving prisoners of war and, in some cases, political personnel; the G3 "demanded" sufficient trucks to motorize certain dismounted units; and division service units required vehicles for transporting supplies--all these more than used the resources of the division.³⁷ Moreover, the war also revealed certain deficiencies in the principle of attaching transportation for the shuttling of troops as taught by the service schools. The 102d Infantry Division G4 stated:

All too often, the school solution is to attach to the division sufficient quartermaster truck companies to handle the task; but it was our experience that such companies, of which three were needed to meet all demands, could be secured on but one-third of the occasions when they were required, and rarely at full strength. As a result, the division frequently resorted to the expedient of "groundling" the engineer battalion and the medium field artillery battalion, and sometimes the attached units in order that the vehicles of these units might be used to move the infantry elements.³⁸

³⁷ McGee, Military Review, XXV (March 1946), 35.

³⁸ McGee, Military Review, XXV (March 1946), 35.

The lack of transportation was reflected by almost every G4 in various after reports. The above conditions of the 102d Infantry Division are therefore considered to be representative of the problems faced by the majority of infantry division G4's throughout World War II.

Since centralized control of the transportation resources of the division was a G4 responsibility, this officer, of necessity, maintained an availability listing of the division assets and was ever watchful of the maintenance situation within the command. This was accomplished through the ordnance officer, who was charged with the responsibility of the majority of vehicular maintenance with the division. Other officers with whom the G4 coordinated on maintenance and availability were the unit transportation officers and the quartermaster, who controlled the majority of the general purpose vehicles within the division.³⁹

Traffic circulation and control was found to follow the manual and service school instruction throughout the author's research of World War II battles. The regulations published in 1940 prescribed both functions as a primary G4 responsibility.⁴⁰ The engineer, military police, and signal

³⁹"Duties of a Division G-4," Infantry School Quarterly, XXXII, No. 1 (January 1948), 139.

⁴⁰U.S., War Department, Staff Officers' Field Manual

officers were also concerned with traffic control and were responsible to the G4 for coordinating activities which came under their supervision. The engineer was concerned with the maintenance and improvement of roads, the supply of maps, and providing signs to be posted along the road; the military police were responsible for the control of traffic and the enforcement of traffic regulations along the route; and the signal unit provided communication to connect the operating agencies of the traffic headquarters.⁴¹ Although the principles taught at the Fort Leavenworth school regarding traffic control proved sound, divisions found it necessary to augment the G4 section with additional personnel to accomplish traffic control requirements. One officer and two enlisted personnel were required by the 102d Infantry Division G4 for this purpose.⁴² Oddly enough and insofar as traffic control is concerned, this same division provided details on one of the most interesting operations during World War II, its crossing of the Roer River in the vicinity of Linnich on 25 February 1945. The limited number of

(1940), p. 15.

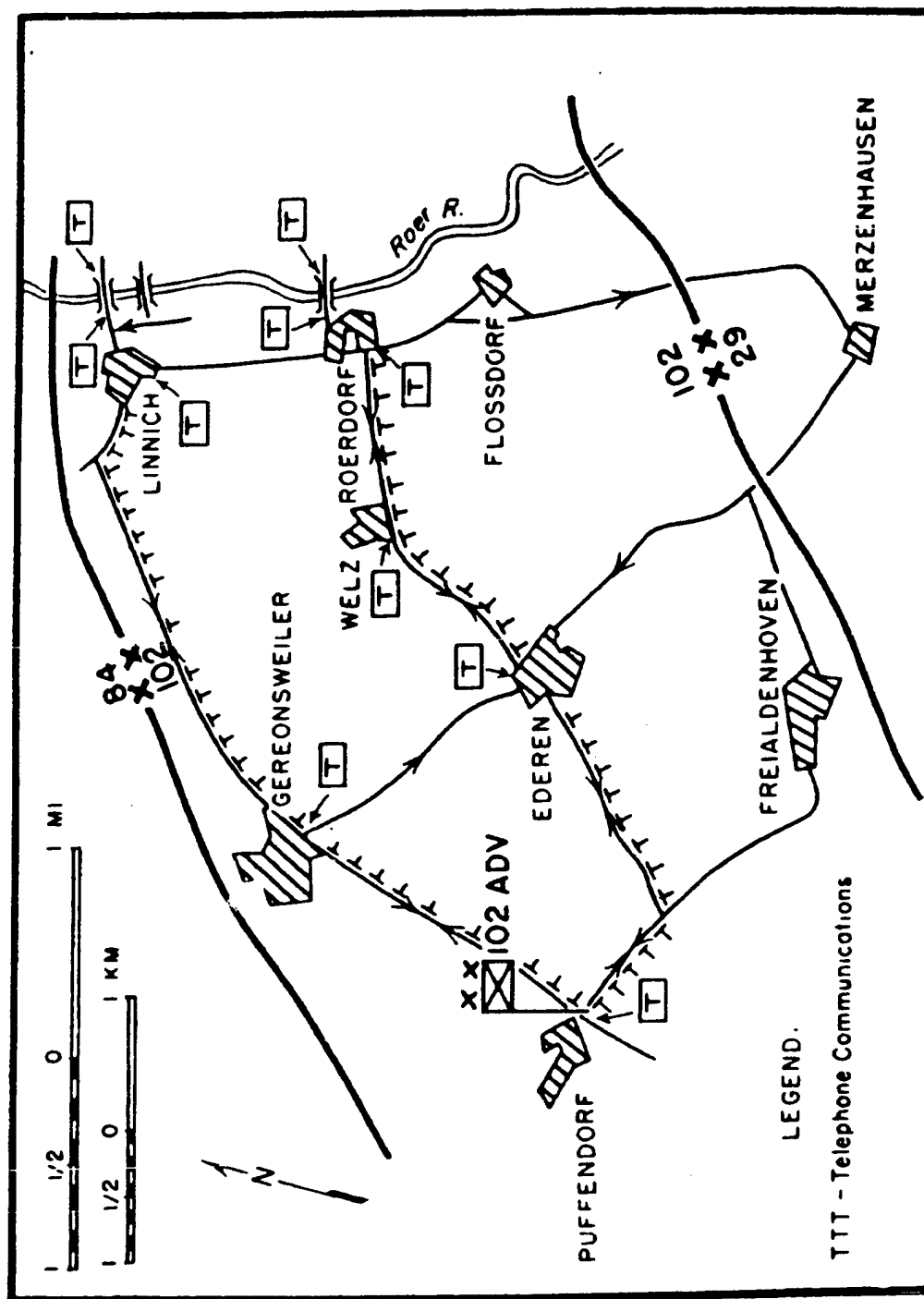
⁴¹The Command and General Staff School, 6th S. S. Course, June-Aug. 1943, Vol. II: Sch. 517 to Sch. 560 (Fort Leavenworth, Kans., College Library), "Traffic Control," Sch. No. 551-W-6-SSC, typewritten pp. 1-20.

⁴²McGee, Military Review, XXV (March 1946), 36.

available bridges, combined with the requirement to provide continuous logistical support to forces on the far shore, required detailed planning in traffic control measures since this aspect of the operation was the most critical factor. An account of this operation, together with a graphic illustration, is presented in succeeding paragraphs.

An intricate traffic control system, with the mission of exercising complete control over the movement of all vehicles in the area, was set up in the forward area just west of the Roer River. Figure 15 shows the road net, the traffic posts, and the traffic communication system. Traffic Headquarters was initially established at the Puffendorf crossroads since practically all traffic had to pass there and therefore could be easily controlled. The traffic control telephone net consisted of two more or less parallel circuits: one from Puffendorf to Ederen to Welz to Roerdorf; the other from Puffendorf to Gereonsweiler to Linnich. Thus even after a column had passed the crossroads at Puffendorf it was an easy matter to halt or divert it to another bridge when the necessity arose because of trouble at a bridge.

Traffic Headquarters, in conjunction with the Troop Movements Division of the G3 Section, strictly controlled the movement of all units in support of the operation. Movement schedules and charts were worked out in detail for



Source: Joseph B. McGee, Maj, USA, "Combat Observations of an Infantry Division G-4," Military Review, XXV, No. 12 (March 1946), 37.

Fig. 15.--102d Infantry Division traffic control plan for Operation "Grenade," effective 23 February 1945

those units expected to cross the river in the early stages of the operation. Priority of crossing, based upon recommendations made by unit commanders, was with a view to insuring that weapons and other equipment would arrive on the east bank of the Roer River in the specific order of need. Every vehicle group was assigned a movement number in order to permit reference in the clear over the communication system without disclosing unit designation. Movement orders were issued by Traffic Headquarters and gave every possible detail as to how and when units would move their vehicle groups from assembly areas to the road net and thence across the river.⁴³ This traffic control system was most effective, as evidenced by the speed with which the 102d Infantry Division, its attached units, and elements of corps and army moved through the restricted area over the Roer River to participate in the flight to the Rhine.

System of Supply

Classes of Supply

A significant change in the classes of supply occurred in 1940. Ammunition, which had previously been listed as class IV was identified as class V. Petroleum, oils, and lubricants, listed since World War I as class I,

⁴³McGee, Military Review, XXV (March 1946), 36-37.

were designated class III. Both changes resulted from the 1937 test of the triangular concept by the 2d Infantry Division. In regard to class V, one of the basic decisions made by the War Department stated that "there should be one ammunition supply system for all types of ammunition used in the infantry division."⁴⁴ This remark was obviously directed toward the split responsibility for ammunition resupply that existed in the square division. The report further implied that all ammunition should be requisitioned and supplied under the general staff supervision of the G4.⁴⁵ This was subsequently approved and appeared as a G4 duty in the 1940 Staff Officers' Field Manual (see Appendix E).

The changes made within the classes of supply and the addition of ammunition as a separate class greatly facilitated and simplified supply planning. This is evidenced by the fact that this supply classification system is basically the same system used in present-day operations. Listed below is a brief description of the classes of supply during World War II, to include changes described above.⁴⁶

⁴⁴Proposed Infantry Division, Headquarters, "Ammunition Supply System for the New Infantry Division Test," Memorandum #1 (Washington: Army War College, 1937), p. 1. [U.S. Army War College Library File 94-20 (ONLY).]

⁴⁵Ibid.

⁴⁶U.S., War Department, Field Service Regulations:

Class I.--Class I supplies included items consumed at a uniform daily rate regardless of combat conditions, such as rations and forage.

Class II.--Items authorized by established tables of allowances, such as radio sets, tools, clothing, and gas masks, were categorized as class II supplies.

Class III.--Class III included engine fuels and lubricants for both vehicles and aircraft.

Class I. --Items of supply not covered by tables of allowances and for which demands were based on actual combat conditions were considered to be class IV. This category included items such as fortification and construction materials and machinery.

Class V.--Ammunition, anti-tank mines, and chemicals were classified as Class V items.

Procurement and Distribution of Supplies

The impetus of supply from rear to front continued to be stressed throughout the war and was adequately discussed whenever and wherever provisions of applicable field manuals permitted. In regard to the distribution of supplies, there were two classifications listed: unit

distribution and supply point distribution. The former method required the higher unit to deliver supplies to subordinate units. The latter required lower units to dispatch their organic transportation to the supply point to draw supplies.⁴⁷

There was no substantial deviation in the method of requesting and issuing class I supplies from the procedures outlined in Chapter III. However, of the three methods for issuing supplies previously discussed (railhead distribution to the quartermaster and subsequently by the quartermaster to individual units; railhead distribution to individual units after sorting by the quartermaster; or supply point pickup by units from the quartermaster), only the first and third methods were found to be satisfactory. The reasons given were that transportation requirements were substantially reduced and that class I would be drawn in compliance with schedules established by the appropriate army supply point. Water distribution points were a responsibility of the engineer battalion commander, who usually attached a water point unit to each regimental combat team for both movement and location.⁴⁸

⁴⁷U.S., War Department, Staff Officers' Field Manual (1943), p. 3-1.

⁴⁸McGee, Military Review, XXV (March 1946), 34.

Classes II and IV items were requisitioned and delivered in accordance with procedures established for the square division (see pp. 72-77).⁴⁹

Class III supplies were requested by divisions based on the daily status report to army of petroleum, oils, and lubricants (POL) available within the division. Allocations were then made by army, and POL was available for pickup at designated class III points. Resupply of gasoline was accomplished using either supply point or unit distribution procedures. The quartermaster company normally established one or more class III points conveniently located for subordinate units. The exchange of empty five-gallon drums for full drums was the common means of resupply. Accordingly, the quartermaster company carried the empty cases of drums from division class III distributing points to the most convenient army class III dump, thus maintaining the full 4,000-gallon division class III reserve.⁵⁰

Class V requisitions were normally in the form of transportation orders and were hand carried by divisional

⁴⁹U.S., War Department, Staff Officers' Field Manual (1943), p. 3-2.

⁵⁰The Command and General Staff School, 19th General Staff Class: Infantry Course (Fort Leavenworth, Kans., College Library, 1944), "Review of Staff Procedures--Logistics," Sch. 224C, Mimeographed p. 6.

units to the division ammunition officer (DAO) for specific types and quantities of ammunition supply. Upon approval by the DAO, the unit accomplished pickup at army or corps ammunition supply points. The credit system (see p. 101) was the normal method used by army for allocating ammunition to the division. Occasionally, particularly during fast moving situations, division dumps were established within the division area and were operated and controlled by personnel of the ordnance unit within the division. Division reserves of ammunition was controlled by the ordnance officer, who used the general cargo vehicles of the quartermaster company for this purpose.⁵¹

Special Operations

A study of major areas of G4 interest during World War II would be incomplete without some reference to special operations. Since special operations occurred so frequently during the war and particularly since such operations required substantially greater effort by the division G4's, it is appropriate to discuss their role in these operations. Accordingly, selected examples of division units engaged in amphibious, mountain, river crossing, and aerial resupply

⁵¹The Command and General Staff School, 6th S. S. Course, II, "Ammunition Supply," Sch. No. 546-W-6-SSC.

operations are discussed to accentuate the additional G4 problems and to point out the techniques employed and the lessons learned by various G4's in the solution of these tactical maneuvers.

Amphibious Operations

Amphibious operations from a G4 standpoint are in themselves a subject that can be treated adequately and well presented only in a paper of considerable length. However, since amphibious operations were conducted quite successfully in both the European and Asiatic Theaters of Operation, it is important that appropriate references be made to certain problems which confronted division G4's and the methods by which these problems were solved.

It was noted that as a general rule amphibious operations, more than any other type of combat operation, required more planning and preparation for their execution. The reason is apparent--there was no way by which mistakes could be corrected once the maneuver began. The G4 was separated from his normal supply base and depended completely on the accuracy of his planning prior to the assault. There was no turning back for additional supplies or equipment that might have been overlooked or not considered at the time of embarkation. The provisions for combat loading,

embarkation, debarkation, special equipment, large quantities of supplies, waterproofing, movement of the unit from home station to the port of embarkation, and Army-Navy coordination were all G4 problems. The magnitude of amphibious operations is perhaps best demonstrated by the size of a division level amphibious task force under Fifth Army in the European Theater. In one instance the command of a single division numbered 55,000 troops; however, 30,000 was the normal strength factor of Fifth Army divisions involved in such operations.⁵² Since the normal strength of an infantry division was 14,281,⁵³ it can be seen that amphibious operations required between two and four times the amount of logistical support normally required for other type operations.

In order to meet and solve the problems involved in amphibious operations for Fifth Army divisions, early reorganization of the G4 section was accomplished. The assistant G4 was assigned to the planning group and, in coordination with the G3, made all plans for outloading the complete task force. This officer was required to fit each type of

⁵²Revelle, Trials and Tribulations of an Army G4, pp. 10-12.

⁵³U.S., Department of the Army, Infantry Division, TOE 7 (Washington: U.S. Government Printing Office, 1943), p. 3.

cargo into its designated priority position, to study the beaches to determine the location of dumps and supply installations to support the tactical plan, and to publish such information to all concerned. An additional officer was provided to work under the G4 in the role of division transport quartermaster (TQM). Subordinate to this officer were TQMs for each regimental size combat team and, still further down in the organization, for each ship or craft. Contained within this group was an organization called the embarkation group. It controlled the phasing of men and material through the port and normally remained after the convoy departed on D-day to load and command the followup echelon.⁵⁴

The waterproofing of all division and attached unit vehicles required the full time and effort of an officer representing the G4 who, in effect, "made command decisions" to coordinate all phases of the operation. The last requirement in embarkation was to insure that all supplies required for the amphibious operation were in fact loaded aboard the ships. This was accomplished during loading by a physical check or tally of the supplies by division representatives under the supervision of the G4. Throughout the

⁵⁴Revelle, Trials and Tribulations of an Army G4, p. 12.

planning and embarkation stages, the G4 required his full complement of personnel authorized by tables of organization and equipment to perform routine duties of supplying and equipping the division on a daily basis. As a result, the bulk of TQMs, checkers, and other personnel required were furnished from sources outside the G4 section.⁵⁵

Debarcation planning provided for the early phasing of service and supply elements ashore to support division operations. The G4 occasionally supervised the shore activity until men, supplies, and equipment were segregated and logistical support operations were established. An ever-present consideration of the G4 was the evacuation and supply plan in the establishment of installations and dumps ashore. This was considered in the light of corps and army absorbing such installations in subsequent operations with minimum readjustment required.⁵⁶

Two of the most detailed accounts of G4 planning and operation during amphibious operations within the Pacific Theater of Operations were found in the reports of the 37th Infantry Division in the Bougainville, Solomon Islands,

⁵⁵Revelle, Trials and Tribulations of an Army G4,
p. 12.

⁵⁶Revelle, Trials and Tribulations of an Army G4,
p. 13.

operation⁵⁷ and in the Luzon, Philippine Islands, landings.⁵⁸ Although each amphibious operation presented problems peculiar to the conditions under which it was executed, certain general lessons were learned from both Bougainville and Luzon.

The following lessons learned from Bougainville are but a few of the more important remarks contained within the G4 section of the report:⁵⁹

1. A C representative of the division commander was not always present when important decisions were made concerning logistical matters. This resulted in the non-availability of appropriate types of water transportation to handle minimum essential combat supplies and equipment.

2. Too much emphasis placed initially on class I and class V requirements resulted in a lack of minimum essential class II and class IV items of supply.

⁵⁷ Army Ground Forces, "Lessons of the Bougainville [Solomon Islands] Campaign" (Washington: Headquarters Army Ground Forces [1944]). (Mimeographed; [Fort Leavenworth, Kans., College Library].)

⁵⁸ 37th Infantry Division, Report After Action: Operations of the 37th Infantry Division, Luzon, P. I., 1 November 1944 to 30 June 1945 (M-1 Operation) (APO 37, San Francisco: Headquarters 37th Infantry Division, 1945). [Fort Leavenworth, Kans., College Library.]

⁵⁹ Army Ground Forces, "Lessons of the Bougainville Campaign," Pt. M, pp. 1-7.

3. In order to preclude confusion and duplication of effort during debarkation, both the G4 and the naval base commander must be aware of each other's plans for offloading. The method by which cargo is moved from the beach must coincide with the naval commander's plans for establishing beach dumps.

4. The division experienced considerable loss of supplies and equipment through pilferage until large guard details were established.

5. Centralized control of cargo vehicles during debarkation provided maximum efficiency. A savings in both time and effort was realized through the pooling concept.

6. A minimum essential amount of vehicles and equipment of different models and makes taken into combat will substantially reduce repair parts supply requirements.

It was stressed throughout "Lessons of the Bougainville Campaign" that the principles and doctrine taught in the general and special service schools and that which was contained in applicable War Department field manuals, principally Field Manual 31-5, were sound. The lessons contained in the report mainly reemphasized and expanded on the then-existing doctrine.

Early in June of 1944, after completion of the Bougainville Campaign, the 37th Infantry Division received word

to conduct further amphibious training and was provided certain naval shipping to support the training program. Upon completion of the training cycle, the G4 took the following significant actions that proved invaluable in the success of the amphibious assault on Luzon:⁶⁰

1. Established a planning section in coordination with the G3 to collect and disseminate logistical information regarding the types of equipment and levels of supply required for the operation. This planning section thus permitted a coordinated tactical and logistical plan.

2. Directed all units to initiate a program of resupply and preparation to include a 30-day level of maintenance supplies, to prepare necessary packaging for shipping impedimenta, to rapidly bring each unit up to authorized levels, and to intensify the maintenance program.

3. Prepared data on measurements of all vehicles, tanks, trailers, engineer equipment, and all classes of supply and equipment anticipated to be taken on the operation. Templates were cut to scale and scale drawings were made of naval ships and crafts. In order to accomplish these actions, two officers over and above the tables of organization were attached to the G4 section.

⁶⁰ 37th Infantry Division, Report After Action, pp. 11-199 passim.

4. Upon receipt of the tentative field order from XIV Corps, the G3 and the G4 began paper loading (based, of course, on the division commander's concept of the operation) on tentatively allocated shipping. Changes in calculation were made when ships' actual characteristics were received.

5. A beach control system was put into operation for embarkation. It consisted of a communications net among the G3, G4, division transport quartermaster, and the four operating beaches. This facilitated both command and control of the flow of units to designated loading sites. In this regard, 126 2-1/2-ton cargo trucks were pooled under the supervision of the division transportation officer for transportation of bulk supplies from the service command dumps to beach loading sites. Dump details were handled by the division quartermaster and the division ordnance officer. Conversely, beach and ship details were organized by the ship's transport quartermaster in conjunction with G4 and G1.

6. The density of troops, vehicles, and equipment offloaded on the beach required the G4 to organize a special traffic control system to avoid congestion and to facilitate the inland movement of supply dumps to support the advancing units of the division. The procedure used in this instance approximates present procedures for river crossing

operations. Generally, the G3 cleared all tactical traffic at critical points in the forward area. After tactical units had crossed key bridges or route intersections, control was passed to the G4. Since movement forward into the Philippines was very rapid and the beach and rear area required representatives of the G4 office, the section was split in half. One part remained in the rear; the other part was forward with the command post.

7. Part of the rail line in the Philippines was still intact, and reconnaissance found a large number of available and serviceable flat cars. However, there were no locomotives. The G4 arranged for two quarter-ton trucks to be improvised with flanged wheels to serve as pulling power for a daily train of class I and class III supplies. This arrangement solved part of the resupply problem, and it was found that 4 loaded 16-ton cars, or 6 empty cars, could be pulled by the quarter-ton locomotive.

8. During the Division's final push to Manila, several isolated situations presented themselves which again taxed the G4's ability. First, the assistant G4 was the officer who actually controlled the crossing of the tactical units over the Pasig, even though it was cited earlier that such a function was a G3 responsibility. Second, the round trip distance between ammunition supply points and elements

of the division artillery was 353 miles. This factor soon became critical because of the high concentration of artillery ammunition required to dislodge the stubborn defenses of the Japanese and because of the high deadline rate of vehicles which resulted from critical shortages of tires, assemblies, tubes, and springs. Again, this required the pooling of motor assets of the 37th Division under the transportation officer. Convoys of between 100 and 150 vehicles were frequently used for hauling class V requirements.

9. The evacuation of prisoners of war and civilians and the removal of the dead for burial were under the direct supervision of the G4 in accordance with standing operating procedures.

In summary, the lessons learned from the Luzon Campaign were in general agreement with those cited for the Bougainville exercise. Similarly, the problems faced by the G4 in both the European and Pacific Theaters of Operation taxed the resources of the logistical section of the general staff and required a great deal of organizational ability and imagination by the G4 to successfully perform his mission.

There are two factors that seemingly appeared not only throughout amphibious operations but in all other types of combat situations presented in World War II. First,

there was the adherence to the fundamentals taught at The Command and General Staff School combined with the guidance provided in appropriate War Department manuals. Second, there was the high degree of staff coordination required by the G4 not only with other general and special staff officers but also with the commanders and staffs of higher, lower, and adjacent units. In the final analysis it was the professional application of the above factors combined with a commonsense approach to each situation that enabled the G4 to solve the problems involved in all types of combat operations.

Mountain Operations

Despite the fact that mountain fighting is actually as old as war itself and that much had been written on the subject prior to World War II, there were still many lessons to be learned in training, tactics, and logistics. Perhaps two of the best examples of peculiar problems facing division G4's in mountain operations were found in studies of Fifth Army divisions operating in the Sicilian mountains and in the Apennines of northern Italy, the latter comparing favorably in ruggedness with the Alps. In both areas movement was restricted, fires were obstructed, resupply was seriously hampered, and communications were less than

satisfactory.

In each operation it was soon realized that the type terrain combined with the ever-present problem of weather had far-reaching effects on the resupply of divisional units. In fact, the total troops employed and the type and duration of smaller unit operations were found to be more contingent on logistical considerations than operations conducted in any other type terrain. For this reason constant and continuing coordination was required between the G4 and the G3. The necessity for early decisions was emphasized in order that supply buildup could be effected in time to meet operational requirements or, conversely, the inadequacy of supply would be recognized prior to the initiation of the operation.⁶¹

One of the first problems to face a division G4 under Fifth Army was the requirement to supply battalions and regiments located on high mountain ranges. This problem occurred initially in Sicily, where the jeep of World War II renown "met its master." Animal transport and, in some cases, human bearers were the answer. Although the solution to the problem seemed relatively simple, it posed unique

⁶¹B. C. Chapla, Lt Col, Inf, "Infantry in Mountain Operations," Military Review, XXVII, No. 12 (March 1948), 15-16.

problems for the G4. First of all, since mules were not available through normal channels, local purchase was required. The initial requirement was for 400 mules to support a division attack in which one infantry regiment would use animal transport exclusively to move over the mountains and surprise the enemy. Although the G4 had men, vehicles, and cash to convert into mules, it was soon determined that Sicilian carts, always scarce in a combat zone, were the only source for this type animal transport. Accordingly, the G4 directed the quartermaster to supervise the procurement of animals and the transportation officer to furnish the vehicles necessary to transport the mules from surrounding villages. A day later some 400 mules had been "procured" and assembled to support the infantry regiment. The use of animal transport by Fifth Army divisions had some attendant problems. First, large quantities of hay and grain were required to sustain the mules; second, the organization of mule companies posed immediate problems for the G4. It was proved, however, that the results obtained were well worth the efforts involved. The initial use of animal transport was so successful that shortly thereafter Fifth Army provided mules to all divisions.⁶²

⁶²Revelle, Trials and Tribulations of an Army G4, pp. 5-6.

The place of animal transport in the system of supply in mountain operations is perhaps best described by the following comments of an assistant G4 at Fifth Army headquarters who wrote:

A minimum of 500 [mules] per infantry battalion are required for maintenance of Class I and V for a distance (one way) of 8 miles for a continuous action of 7 days. At any one time in Italy one division would have no more than four Infantry Battalions to support by mules. Others could usually be reached by jeep and trailer. It was not uncommon for G4 to be supervising the supply of one regiment along a road suitable for all trucks, another regiment by 2-1/2 ton truck to a "jeep-trailer" transfer point where supplies were transferred to a jeep trailer and hauled over a trail behind a bulldozer, D-4 blazing the trail; and the other Regiment by 2-1/2 ton trucks, to jeep trailers, to mule, to consuming unit. This called for careful planning and coordination centrally controlled [by the G4] to make most efficient use of the means available.⁶³

As terrain became more difficult to negotiate, division G4's used human supply trains. These trains were usually constituted from headquarters, cannon, and service companies and reserve units. In addition, packboards were fabricated that increased the load each man could carry to otherwise inaccessible locations, a factor which completely astounded the enemy forces. In the final analysis, it was alert G4 planning and action that allowed objectives to be seized sooner and with less casualties than originally

⁶³Revelle, Trials and Tribulations of an Army G4, p. 7.

anticipated in the tactical plan.⁶⁴

As a result of the involvement of the 10th Mountain Division and numerous straight infantry divisions during World War II, it was recommended that in future mountain operations the G4 give particular attention to the following logistical considerations:⁶⁵

1. The use of air resupply should be anticipated and the detailed planning required should be done early.
2. The use of animal transport, particularly from regimental to battalion distribution points.
3. The use of packboards for human bearers.
4. Additional maintenance requirements for weapons and vehicles.
5. The substitution of various standard items of equipment for items more easily transportable, such as pack artillery.
6. The requirement for a higher ratio of engineer and service troops because of the increased need for supplies and the seriousness of supply failures.

River Crossing Operations

River crossings were special operations and, as

⁶⁴Revelle, Trials and Tribulations . . ., p. 8.

⁶⁵Chapla, Military Review, XXVII (March 1948), 18-20.

such, provided special problems in both the tactical and logistical planning requirements. This is as true today as it has been in the past. During World War II, there were many river crossing operations, the majority of which were executed as an attack of a river line. In discussing river crossing operations, it is desirable first to review the instruction presented at The Command and General Staff School and to equate the academic considerations to those which existed in the field at the height of the war.

It was taught that in the attack of a river line the following preliminary planning considerations were essential elements to be accomplished in any G4 analysis:⁶⁶

1. Strength of division attachments.
2. Location of installations before and after the crossing.
3. Classes and quantities of supplies to be carried into the initial assault.
4. Assignment of responsibility for resupply of forward units prior to completion of the bridge, to include methods of accomplishing resupply.
5. Evacuation of casualties on the far shore, to include responsibility and means employed.

⁶⁶The Command and General Staff School, 19th General Staff Class, Subj. 204 C-ME, secs. I-II.

6. Organization of plan for traffic control on divisional routes, to include organization of traffic control headquarters.

7. Tactical considerations that place priorities on the use of division transportation, such as making allowance for motorizing a portion of the reserve.

8. Coordination with G3 on priority of traffic to move across the bridge.

9. Requirements for additional service support personnel and equipment to support the operation.

Analysis of the problems of division G4's operating under Fifth Army not only revealed striking similarity to the academic considerations itemized above but offered some additional points for consideration.

During river crossings in Italy and Germany, the G4 was always required to obtain additional materials since "no general or G3 would consider crossing with the materials organically available to the division"⁶⁷ and there were always unusual class V demands for heavy calibers to soften up the far shore in preparation for the attack. These two requirements were contingent, of course, on the enemy defending the far shore. Once the G2 gave an affirmative

⁶⁷Revelle, Trials and Tribulations of an Army G4, p. 9.

answer it became the G4's responsibility to obtain the items required. Required items included "life preservers, special assault boats, bridges, dukws, alligators, rafts, flame-throwers (prepared positions), extra items for additional OP's, mine detectors, and thousands of feet of rope with buoys."⁶⁸

The requirements for coordination with the other general and special staff officers as well as the division artillery commander remained constant throughout all phases of the river crossing operation. In addition, the G4 made certain that the needs for the operation were available and that higher headquarters had the required ammunition. The natural tendency of the artillery to increase stockage at gun positions was soon discontinued since this situation produced requirements for truck transportation to move large quantities of unexpended ammunition and proved uneconomical in terms of both time and resources.⁶⁹

The early provision for establishing dumps on the far side of the river was essential, particularly when there were a small number of bridges available for the crossing.

"Immediate movement of rations, gasoline, and ammunition to

⁶⁸Revelle, Trials and Tribulations . . ., p. 9.

⁶⁹Revelle, Trials and Tribulations . . ., p. 9.

division dump areas on the far side is advisable."⁷⁰ It was a standing procedure to load the trucks of the quartermaster company with class I supplies for two days, 15,000 gallons of gasoline, and selected mortar and machine gun ammunition for the establishment of forward dumps on the far shore. Finally, after the far shore was secured, the G4 required the division quartermaster to organize a salvage detail to recover discarded items that might be returned to the division stocks for use in the next crossing.⁷¹

Aerial Resupply Operations

There were many instances of aerial resupply of division size units in both theaters during World War II. One of the most interesting accounts involving the division G4 was found in the battle of Bastogne and concerned the aerial resupply of the 101st Airborne Division. In this particular action, which is described below, the G4 organized and, of necessity, operated the supply system to accomplish unit distribution to all elements.

In mid-December of 1944, when the German counter-offensive broke through the Ardennes, the 101st Airborne Division was quickly moved to Bastogne. German tank columns

⁷⁰Revelle, Trials and Tribulations . . ., p. 10.

⁷¹Revelle, Trials and Tribulations . . ., pp. 10-11.

completely encircled the 101st Airborne Division on the night of 20-21 December, and the only means available for resupply was by air. On 23 December, 260 cargo planes dropped 334 tons of supplies by parachute into an open field northwest of Bastogne. The navigational aids at this open field were established and operated by two pathfinder teams of the 101st Airborne Division that had been dropped early in the morning on the day of the drop. Arrangements for the collection of supplies on the ground was the responsibility of the quartermaster and ordnance companies that normally established dumps for various supplies under division control. However, neither of these units was located at Bastogne or able to enter the city because of heavy enemy concentration. The division G4 therefore organized supply recovery details from each of the two infantry regiments. These supply recovery details reported the type and quantity of supplies recovered and made distribution to divisional units based on instructions from the G4.⁷²

This example demonstrates an aspect of the division G4 role in an aerial resupply operation. The pathfinder teams, the delivery teams, other personnel, and the

⁷²James A. Huston, Maj, USA, Airborne Operations: Chapters I through IX (Washington: Office of the Chief of Military History [1959]), pp. 106-108. (Mimeographed; [Fort Leavenworth, Kans., College Library].)

necessary equipment were in effect directly responsive to this staff officer in accomplishing the unit delivery of air supplies to divisional units.

CHAPTER V

SUMMARY AND CONCLUSIONS

Summary

Early Development of U.S. Army General Staff

The U.S. Army General Staff system is a relatively new organization. Although its beginning was traced to 1776, significant developments in its organization were not effected until Elihu Root (1845-1937) became Secretary of War. It was because of his influence that the Army's present Command and General Staff College and the Army War College, now called the National War College, were both established in 1901. The culmination of his efforts, however, was achieved in 1903 with the passage of the Military Act creating the General Staff Corps.

The training of general staff officers from 1903 to the present time was accomplished at The Command and General Staff School. It has been shown that the teachings of this college were closely followed in both World War I and II.

Organization

During the period covered in this study, the G4 was

the last general staff officer to be authorized by tables of organization and equipment for the Army divisions. The establishment of a general staff section to plan, coordinate, and supervise logistical functions within the division was a direct result of the experiences gained and the lessons learned during World War I. The initial organization of the G4 section consisted of four officers and three enlisted men and was generally divided into two major subsections: a supply and transportation section and an evacuation and construction section. Listed below are the initial personnel organization of the G4 section in 1921 and the major changes that occurred in 1937 and 1945.

1921.--In 1921 there were three commissioned officers, one warrant officer, two sergeants, and one enlisted man.

1937.--In 1937 there were two commissioned officers, one sergeant, and two enlisted men.

1945.--In 1945 there were three commissioned officers, one warrant officer, two sergeants, and two enlisted men.

The reduction of personnel for the G4 section in 1937 was attributed to the functionalization of medical services under the surgeon, the gradual reorganization of the division to include provisions for a medical regiment,

and the overall reduction of forces throughout the military during the lean years between World War I and World War II.

The 1940 reorganization, curiously enough, did not affect the personnel authorized for the division G4 even though substantial changes were effected in the overall organization and strength of the division. By 1945, however, experiences of World War II required the assignment of two additional officers and one enlisted man to the division G4 section. These personnel were required on a full-time basis primarily to handle the increasing transportation requirements generated by the large number of wheeled vehicles assigned to the triangular division in 1940.

Even after the division G4 section was increased from five spaces in 1940 to a total of eight spaces in 1945, the requirement for additional personnel for the supply and evacuation section continued to be stressed. This fact was evidenced throughout World War II and particularly during the numerous amphibious, mountain, and river crossing operations that were conducted in the European and Asiatic Theaters of Operation. Although such operations were classified as "special operations," they were quite common for numerous American divisions and, as such, habitual increases in personnel were required by the G4 to accomplish the additional logistical workload.

Duties and Responsibilities

A comparison of the basic duties of the G4 in 1923 and 1945 is shown in Table 6. The duties of this officer increased steadily during the period covered by the study. Moreover, all of his responsibilities gradually became identified within the functional areas of supply, evacuation and hospitalization, transportation, and services. Certain responsibilities such as preparation of administrative orders or circulation maps were not easily adaptable to functionalization and were placed in a miscellaneous category. Although there was a considerable increase in the G4 functions between 1923 and the start of World War II, there were no additional personnel assigned to accomplish the added workload. Conversely, the strength of the section was reduced. This situation was subsequently corrected as shown above to increase the overall strength of the section on a permanent basis during the course of the war and to provide additional personnel during the conduct of special operations.

It was further observed that the division G4, more than any other general staff officer, frequently issued instructions within his area of interest to both staff officers and troops. Although in theory this officer coordinated and directed the supply elements within the division

TABLE 6
G-4 DUTIES AND RESPONSIBILITIES IN 1923 AND 1945

1923	1945
<u>Supply function</u>	
Procurement, storage, and distribution of supplies	Procurement, storage, and distribution of supplies Recommended allocations of ammunition (1940) Determined requirements and developed standards for new items (1940)
<u>Evacuation and Hospitalization Function</u>	
Supervised hospitalization and evacuation of men and animals	Controlled with respect to men and animals
<u>Transportation Function</u>	
Movement of supplies by land Traffic control	Movement of supplies by land, water (1928), and air (1940) Traffic control Operation of inland waterways (1940)
<u>Services Function</u>	
Location of dumps, distributing points, and supply establishments	Location of supply, evacuation, and maintenance facilities Construction, operation, and maintenance of facilities relating to supply, shelter, transportation, and hospitalization (except fortifications)
Supervised construction activities (except fortifications)	

TABLE 6--Continued

1923	1945
<p>Controlled trains elements in certain cases and operated a transportation pool</p> <p>Coordinated disposal of captured animals and materials</p> <p>Supervised operation of Finance Officer</p> <p>Supervised operation and location of all utilities</p> <p>Supervised salvage and burial</p>	<p>Assignment and movement of supply, medical, technical, and labor troops not tactically employed</p> <p>Supervised salvage and burial</p> <p>Appointed labor troops (1924)</p> <p>Maintenance of equipment (1924)</p> <p>Property responsibility and accountability (1924)</p> <p>Funds and priority of expenditure (except payment of troops and civilians) (1924)</p> <p>Procured, maintained, leased, and disposed of real estate, shelter, and facilities (1924)</p> <p>Construction and maintenance of roads, docks, and airdromes (1940)</p> <p>Collection and disposition of captured supplies, materiel, equipment, and animals (1940)</p> <p>Construction, operation, and maintenance of military railways and water terminals (1940)</p> <p>Acquisition and improvement of airplane bases (1940)</p> <p>Recommended allocation of small arms and equipment (1940)</p>
<p><u>Miscellaneous</u></p> <p>Prepared plans, administrative orders, and G4 situation maps</p> <p>Maintained supply statistics</p>	<p>Prepared journal, situation maps, circulation maps, periodic reports (1924), and special studies (1928)</p> <p>Maintained status of supplies</p> <p>Prepared logistical estimates (1937)</p>

TABLE 6--Continued

1923	1945
<p>Recommended measures for protecting lines of communication and rear establishments (1940)</p> <p>Recommended location of rear boundaries (1940)</p> <p>Prepared plans, authenticated and distributed administrative orders, both fragmentary and complete (1940)</p>	

without actually operating the supply system, such was not the case during the war itself, where, on many occasions, the division G4 was both a planner and an operator. There were numerous examples to substantiate this--the operation of traffic control headquarters, the initial operation of shore support installations during amphibious operations, and the control of aerial resupply operations are but a few of the many examples noted. Moreover, the degree of authority the G4 exercised over the technical services, which by doctrine were charged with the operation of the system of supply, necessarily placed him in the role of an operator. This was evidenced by his determination of the manner in which supplies and services would be furnished, by the location and disposition of the service support elements within the division area, and by the employment of the various service units concerned to support logistically the overall division mission.

The single problem common to all divisions during World War II was the lack of sufficient transportation to accomplish all requirements. Notwithstanding the greater mobility achieved by the infantry division as a result of the division reorganization in 1940, there were still insufficient vehicles. Centralized control of the division's general purpose vehicles under the G4 proved to be the best

solution to the problem, but there were times when even this course of action was not wholly satisfactory.

Identifying the role of the division G4 during World War II with the present role of the division support command commander would be an accurate comparison except that:

1. The present division support command commander has a larger staff than any G4 section had.

2. There is a permanent command relationship established within the present division support command, whereas in the division of World War II a command relationship was "implied" between the G4 and the operating technical services.

There was a general agreement throughout the numerous examples of division G4 operations reviewed during the course of this study that the concepts and teachings in appropriate manuals and as amplified in the teachings of The Command and General Staff School were sound when properly applied. The only additional ingredients required to successfully discharge the G4's duties were common sense, imagination, ingenuity, and flexibility.

Command and Staff Relationships

The introduction of the G4 to the general staff did not alter established basic precepts of command and staff

relationships. Like other general or special staff officers, the G4 was an assistant to the commander and performed those duties delegated to him by the commander.

The relationship of the G4 to other general staff officers and special staff officers can be summed up primarily in one word--coordination. Coordination was required by the G4 with the G1 to develop administrative plans and orders, with the G2 on enemy capabilities that might affect the location of division installations, and with the G3 in order that adequate supply and service plans were completed to support the tactical operation.

The special staff officers, and in particular the supply elements, dealt directly with the G4, who settled all routine questions and referred to the chief of staff only those areas which involved new policies. Special staff officers throughout the period could, however, deal directly with the commander or chief of staff when necessary.

System of Supply

The system of supply and evacuation underwent gradual but substantial change during the period 1921 through 1945. The G4 became the focal point for coordinating logistical support requirements for the division; the entire system of supply was refined; standing operating procedures

were adopted; and wagons were replaced by vehicles. The G4 responsibility for supply during the interim period between the wars and likewise during World War II itself were first as the chief supply planner for the division and second as the principal coordinating staff officer for the division.

The reclassification of supply items in 1940 was adopted as part of the changeover from the "square" to the "triangular" division. Basically, the adoption of five classes of supply, instead of the four used during World War I, greatly simplified and facilitated logistical procedures. Class III and class V were identified and treated separately in the overall requisition and distribution system. Of greater significance, however, was the attendant transfer of all ammunition supply requirements to the division G4. Previously, class V had been a split responsibility, with the G4 coordinating requirements for small arms ammunition and the division artillery commander having responsibility for requisition, storage, and distribution of artillery ammunition. The elimination of this split responsibility facilitated the planning, procurement, and distribution of class V.

Two basic systems were used for supply delivery (except class V) during the period discussed. First, supplies were drawn from army distribution points by the major units of the division; or second, supplies were drawn by the

appropriate service unit. The method found most satisfactory during World War II was the latter since it resulted in a savings of overall transportation requirements and, of less importance, insured a more positive response by the division in pickup of supplies at times and locations specified by higher headquarters. Class V, except for reserves, was drawn by the unit concerned from army or division ammunition dumps. The division's class V reserve continued to be drawn by the ordnance unit.

Conclusions

An analysis of the information contained in the preceding chapters revealed the causes for establishing the G4 at division level, the important contributions this officer made during the period covered, and the techniques and methods by which his duties and responsibilities were discharged. Major changes in division organizations and in the G4 section organization were discussed and analyzed. The relationship of this officer with both general and special staff officers and subordinate commanders was outlined and the various aspects of combat service support were treated in detail. As a result, the following conclusions were reached concerning the division G4 during the period 1921 through 1945:

1. The G4 section was organized as a result of lessons learned during World War I.

2. The duties of the G4 were steadily increased.

3. The G4 section required additional personnel on a permanent basis during World War II and augmentation during the planning and execution of special operations.

4. The G4 functioned as the chief supply planner and coordinating staff officer for the division.

5. The G4 followed published doctrine and the teachings of The Command and General Staff School (now the U.S. Army Command and General Staff College) in accomplishing basic duties and responsibilities.

APPENDIXES

APPENDIX A: EXTRACT OF G4 DUTIES

Source: The General Service Schools, Manuscript for Training Regulations No. 550-10: Note Book for General Staff Officers with Combatant Troops (Fort Leavenworth, Kans.: The General Service Schools Press, 1924), pp. 1-88. (Mimeographed.)

PART I.

DUTIES OF GENERAL STAFF OFFICERS OF THE DIVISION.

		Paragraphs	Page
Section I	Basic duties	1-5	1
Section II	Mobilization and Training . .	6-7	11
Section III	Troop Movements	8-12	17
Section IV	Security	13-15	35
Section V	Combat (offensive)	16-22	43
Section VI	Combat (defensive)	23-24	64

SECTION I

Basic Duties

.

5. G-4: - G-4 performs the following basic duties:

a. Prepares plans for, secures approval thereof, and supervises activities which relate to all phases of supply, hospitalization, evacuation, and transportation. These include the supervision and coordination of the recommendations of the technical, supply, and administrative staff relative to:

(1) The procurement of supplies, equipment, and animals, including action on and the forwarding of requisitions.

(2) The storage of supplies, equipment, and the replacement of animals, including the location of the supply establishments involved.

(3) The distribution of supplies, equipment, and animals, including the location of distributing points.

(4) The maintenance and repair of equipment, including the location of the establishments involved.

(5) The procurement and operation of utilities.

(6) Property accountability and responsibility.

(7) The collection, hospitalization, and evacuation of sick and wounded men and animals.

(8) Construction, exclusive of fortifications.

(9) The maintenance of roads and bridges.

(10) Circulation and traffic control.

(11) Burials.

(12) Salvage, including disposal of captured material and animals.

(13) The use of the division transport.

(14) The apportionment of labor troops.

(15) Estimates for funds and priority of expenditures.

(16) Leasing or purchase of real estate.

b. Formulates section policies.

c. Supervises the organization and equipment of administrative troops.

d. Controls such parts of the transportation of the division as may be directed by the division commander.

. . .

e. Arranges through the chief of staff with higher headquarters for assistance in supply, transportation, evacuation, and hospitalization, and provides for the details of this assistance with respect to the division when necessary.

f. During active operations:

(1) Considers the tactical plan of operations and instructions as communicated by the commander or chief of staff.

(2) Examines the administrative orders or instructions of higher units.

(3) Considers administrative factors affecting matters over which he has jurisdiction.

(4) Confers with other general staff sections.

(5) Makes such ground reconnaissance or map study as time permits.

(6) Discusses the situation with those members of the division staff who are directly concerned with matters coming under his jurisdiction; and makes such preliminary decisions concerning these matters as the situation demands.

(7) Receives recommendations from the same staff officers, makes necessary adjustments, and renders such decisions as he is empowered [sic] to make.

g. Prepares the administrative order in collaboration with G-1 and submits it to the chief of staff for approval.

h. When necessary, supplements the administrative order by special instructions to the staff on matters under his jurisdiction.

i. Prepares and keeps up to date:

(1) Journal.

(2) Situation map.

k. Prepares:

(1) Circulation map . . .

(2) Files of information which may be needed later, including supply.

(3) Periodic reports.

(4) Special studies and reports when required.

(For suggested form for journal and report see . . .

[Appendix B].

l. Observes the operation of activities under his supervision in order to assist the commander in determining that orders in force are suitable, are fully complied with, and are executed in the best possible manner to carry out the commander's plan of action.

m. Secures by inspections, and by supervision of the technical, supply, and administrative staff, the greatest possible efficiency in the operation of activities under his supervision.

SECTION II

Mobilization and Training

	Paragraph	Page
Mobilization	6	11
Training	7	14

6. MOBILIZATION. The following outline of duties of division general staff officers is general in its nature, is applicable to the mobilization of Regular, National Guard, or Organized Reserve divisions, and refers to the duties of such staff officers after their arrival at the division mobilization point.

Prior to arrival at the mobilization point, these staff officers may be called upon to assist the corps area commander in carrying out the initial steps of the mobilization. The duties to be especially emphasized at the mobilization point are the following:

.

e. G-4:

(1) Prior to M day, on the date designated by the corps area commander, reports at the mobilization point, and organizes his office.

(2) Supervises the execution of previously prepared plans, and, if necessary, prepares additional plans for the following:

- Hospitalization of men and animals
- Construction.
- Maintenance of roads and bridges.
- Traffic control in the mobilization area.
- Transportation.
- Receipt, storage and issue of supplies and equipment.
- Utilities.
- Payment of troops.

(3) Supervises the execution of previously prepared plans for the supply, and messing of incoming units and recruits.

(4) Supervises the execution of previously prepared plans for the checking of equipment of incoming

units and recruits and for supplying deficiencies.

(5) Supervises the preparation of requisitions for additional supplies and equipment, and sees that such requirements are filled.

(6) Keeps himself and the chief of staff informed relative to the status of the equipment of the division.

7. TRAINING. The duties to be emphasized especially are:

.....

e. G-4:

(1) Recommends to G-3 the scope of training, of troops engaged in supply, evacuation, transportation, and traffic control.

(2) In conformity with the approved training program of the division, directs the activities, and supervises and coordinates the recommendations, of the technical, supply, and administrative staff relative to:

(a) Procurement and distribution of supplies and equipment required for schools and training.

(b) Estimates of funds and priority of expenditures for such training supplies and equipment as is to be procured locally.

SECTION III Troop Movements.

	Paragraph	Page
Movements in general	8	17
By rail in the theater of operations . . .	9	22
By marching	10	26
By water	11	27
By motor transport	12	31

8. MOVEMENTS IN GENERAL. The duties to be emphasized especially in all troop movements are:

.....

e. G-4:

(1) Determines from study of the situation data relative to:

(a) Changes in railhead and other refilling points.

(b) Type of rations required for the movement.

(c) Evacuation for old and new areas.

(d) Decision as to the priority of movement for supply and technical elements.

(e) Decision as to the supplies to be carried.

(2) Furnishes to G-3 the following G-4 data for the warning order:

- (a) Equipment to be carried.
- (b) Packing and disposition of surplus baggage and equipment.

(3) Receives data from G-3 relative to the detailed plan for the movement.

(4) Receives data from G-1 relative to quar-
tering arrangements.

(5) Furnishes data to technical, supply and administrative staff:

- (a) Detailed plan for the movement.
- (b) Special supply problems to be considered.
- (c) Restrictions on daylight movements.
- (d) Road restrictions and circulation.
- (e) Priorities of troops over trains.
- (f) Use of surplus tonnage of division train.

(6) Receives from technical, supply and administrative staff their recommendations for the move, including the following important items:

- (a) Plan of Class I supply for all elements of the division.
- (b) Water supply arrangements.
- (c) Special assignments of division transportation.

(d) Control, bivouacs and use of trains, including special assignments of vehicles to meet unusual conditions that may arise.

(e) Special provisions for traffic control at critical points.

(7) Prepares, secures approval of, and publishes the administrative order (for form, see . . . [Appendix B]).

(8) Makes provision for a representative of his office at both the old and new command post.

9. BY RAIL IN THE THEATER OF OPERATIONS. The duties especially to be emphasized in this situation are:

.

e. G-4:

- (1) See paragraph 8 e (1).
- (2) Determines, from a consultation with railway transportation service, data relative to:
 - (a) Type of transportation to be furnished.

(b) Schedule of trains from each entraining point.

(c) Loading facilities of each entraining and detraining point.

(d) Length of time the trains will be spotted before departure.

(e) Cooking facilities available in railway trains.

(3) See paragraph 8 e (2).

(4) Secures data from chief of staff relative to:

(a) Order of movements of elements demanded by the tactical situation.

(b) Elements, if any, to be moved by marching.

(c) Any desired modification of the composition of standard trains.

(5) After final conference with representative of transportation service, furnishes the following data to G-3:

(a) Detailed schedule of railway, including:

(i) Times of departure from entraining points.

(ii) Composition of each train at each entraining point.

(b) Limitations on handling units imposed by loading and unloading facilities at entraining and detraining points.

(6) See paragraph 8 e (3), (4), (5), and (6).

(7) In addition, considers with the technical, supply and administrative staff the following:

(a) Traffic control, including that at entraining and detraining points.

(b) Special transportation required for entraining and detraining:

(i) Units furnishing same, and amounts.

(ii) Time of reporting.

(iii) Person to whom reporting.

(c) Loading and unloading parties, including:

(i) Composition.

(ii) Time and place to report.

(iii) Quartering arrangements.

(d) Time troops and materiel should arrive at entraining points.

(8) Prepares, and provides for the issue of, instructions for the commander of troops on each train, covering:

- (a) Procedure and method in loading and unloading trains.
- (b) Statement required for each train, for the railway transportation officer, showing:
 - (i) Numbers of officers, men, and animals.
 - (ii) Number of vehicles by type.
 - (iii) Amount of baggage.
- (c) Stops to be made en route permitting rest, use of latrines, and the procurement of water, coffee, and food.
- (d) Relations with railway officials.
- (e) Conduct of movement en route.

9) See paragraph 8 e (7) and (8).

10. BY MARCHING. The duties especially to be emphasized in this situation are:

.....

e. G-4:

- (1) Determines from study of situation the data outlined in paragraph 8 e (1).
- (2) Decides extent of control of trains desirable for him to exercise and obtains authority therefor.
- (3) Prepares such data for warning order as may be required. See paragraph 8 e (2).
- (4) Advises division engineers with respect to availability and condition of roads.
- (5) See paragraphs 8 e (3) to (6) inclusive.
- (6) If necessary, designates commanders of groups of trains and issues instructions to them.
- (7) See paragraph 8 e (7) and (8).
- (8) With respect to plans for supply, insures that supply and evacuation arrangements for the troops employed on security duty are such that those units are properly provided for.

11. BY WATER. The duties especially to be emphasized in this situation are:

.....

e. G-4:

- (1) Obtains from a study of the situation, consultation with the chief of staff, and from the transportation service:

- (a) Method of loading, including:
 - (i) Separate or unit loading.

- (ii) Designation of equipment which is to be considered freight or baggage.
- (iii) Method of packing and marking freight.
- (iv) Requirements for troops for loading freight.
- (b) Embarkation schedule, including:
 - (i) Assignment of ships for troops, animals, and cargoes.
 - (ii) Dates of sailing of ships.
- (c) Details of embarkation, including:
 - (i) Amount of supplies to accompany each organization.
 - (ii) Method of packing and marking baggage.
 - (iii) Method of loading troops.
 - (iv) Delivery and method of loading baggage.
 - (v) Time of delivery of baggage and freight to each ship.
 - (vi) Requirements of troops for transport guards and troop masses.
 - (vii) Time at which guard details reach ships and are posted.
- (2) Transmits to G-3, when assignment of ships is left to the division:
 - (a) Ship capacities for personnel.
 - (b) Tonnage required for the freight of the division.

(3) See paragraph 8 e (3), (7) and (8).

12. BY MOTOR TRANSPORT. When the control of the movement is retained by higher authority, the details of the movement are worked out by such higher authority. When the control of the movement is vested in the division, the duties especially to be emphasized are:

.....

e. G-4:

- (1) Determines from a study of the situation and from the G-3 general schedule:
 - (a) Units and equipment that are to be moved by truck.
 - (b) Elements that are to move by marching, and suitable grouping thereof.
 - (c) Order in which units are to move.
 - (d) See paragraph 8 e (1).

(2) Issues such administrative order or dispatches such administrative messages as may be required. See paragraph 8 e (2).

(3) Holds a conference with G-3 or his representative and a division motor transport representative to consider:

(a) Regulating point.
 (b) Entrucking points for each unit.
 (c) Time of entrucking of each unit.
 (d) Assignment of transportation of each point.

(e) Road circuits.
 (f) Initial point.
 (g) Use of division transportation.

(4) Makes such reconnaissance as may be necessary, conferring en route with organization commanders when desirable.

(5) In conjunction with the motor transport officer in charge of the motor transport troop movement column and a representative of G-3, settles all the above questions.

(6) See paragraph 3 e (3) to (6) inclusive.

(7) G-4 issues:

(a) Instructions for loading which include the following:

(i) Equipment to be loaded.
 (ii) Designation of officers who are to provide facilities necessary to load equipment.

(b) Instructions covering procedure in case of breakdown.

(8) See paragraphs 8 e (7) and (8).

SECTION IV

Security

	Paragraphs	Page
Security in general	13	35
Security on the march	14	37
Security at the halt	15	40

13. SECURITY IN GENERAL - The duties to be emphasized in all situations involving security measures are:

.

e. G-4:

(1) See paragraph 10 e (8).

(2) Confers with staff officers and train commanders responsible for movement of trains under G-4 control concerning instructions relative to camouflage, secrecy and concealment.

(3) Confers with commander of security detachment relative to assistance to be given the detachment in supply and evacuation.

14. SECURITY ON THE MARCH. - The duties to be emphasized especially are:

e. G-4:

See paragraph 13 e.

15. SECURITY AT THE HALT - The duties to be emphasized especially are:

e. G-4:

See paragraph 13 e.

SECTION V.

Combat (Offensive).

	Paragraph	Page
Offensive combat in general	16	43
Meeting engagement	17	48
Reconnaissance in force	18	50
The attack	19	51
Passage of lines (continuing the attack) .	20	54
Pursuit	21	58
Landing on hostile shores	22	60

16. OFFENSIVE COMBAT IN GENERAL. - The duties to be especially emphasized in all offensive combat situations are:

e. G-4:

(1) Obtains from study of the situation and other sources:

(a) Refilling points available for the division.

(b) Arrangements required with higher authority for such credits of supplies and such assistance in transportation and evacuation as may be required by the situation.

(c) Circulation prescribed by higher authority.

(d) Road net available, and capacity and character of the roads.

(e) Designation of axial road, if any.

(f) Disposition of surplus baggage and property.

(2) Keeps in close touch with G-3 to know the tactical situation, and the detailed plans contemplated.

(3) For the functions coming under his jurisdiction, keeps the technical, supply, and administrative staff informed of the situation, communicating to them from

time to time his preliminary decisions.

(4) Receives, as the situation demands, the recommendations of the technical, supply, and administrative staff, makes necessary adjustments, and renders decisions. These matters generally include:

- (a) Location of bivouacs of field and service trains.
- (b) Location of distributing points.
- (c) Location of hospital and collecting stations.
- (d) Maintenance of roads and bridges.
- (e) Circulation.
- (f) Arrangements for salvage and burial.
- (g) Traffic control.

(5) Prepares the administrative plan. Prepares, submits for approval, and secures issue of the administrative order when the situation demands.

17. MEETING ENGAGEMENT. - The duties especially to be emphasized are:

.....

e. G-4:

- (1) See paragraph 16 e.
- (2) If trains have been under G-4 control, makes recommendations as to release of such parts of the trains and the time for this release as the situation demands.

18. RECONNAISSANCE IN FORCE. - The duties especially to be emphasized are:

.....

e. G-4: - See paragraph 16 e, (2) to (5) inclusive.

19. ATTACK. - The duties especially to be emphasized are:

.....

e. G-4:

- (1) Obtains from study of the administrative and the tactical situation the following data:
 - (a) Accumulation of supplies needed, particularly ammunition and engineering supplies.
 - (b) Nature and probable duration of contemplated action.
 - (c) See also paragraph 16 e (1).
- (2) Secures issue of administrative order. See paragraph 16 e (2) to (5) inclusive.
- (3) With respect to circulation, traffic control, and handling of trains, provides for establishment of barrier line and incidental priority when necessary. Considers also tentative circulation in zone of advance.

(4) With respect to G-1 recommendations for handling civilian population and prisoners of war, makes arrangements for feeding and clothing this personnel when necessary.

(5) Has available tentative plans for possible pursuit or retreat.

20. PASSAGE OF LINES - (continuing the attack). The duties especially to be emphasized are:

.....

e. G-4:

(1) Obtains from a study of the administrative and tactical situation, and from consultation with G-4 of the division being passed through, the following data:

(a) Nature and probable duration of contemplated action.

(b) Accumulation of supplies needed, particularly ammunition and engineering supplies.

(c) Supplies available in area.

(d) Location of front line elements, administrative establishments, and the train, of the division being passed through.

(e) Decision with G-4 of division being passed through as to movements of trains of both divisions on roads during passage.

(f) See also paragraph 16 e (1).

(2) Gives to G-3 advice on the use of roads.

(3) Secures issue of administrative order.

See paragraph 16 e, (2) and (5) inclusive.

(4) With respect to the preliminary decisions communicated to the technical, supply, and administrative staff, emphasizes:

(a) Necessity for immediate consultation with similar staff of the division being passed through.

(b) Necessity for immediate ground reconnaissance.

(5) With respect to use of military police in traffic control, secures the coordination of responsibility of each division during the passage.

21. PURSUIT. - The duties especially to be emphasized are:

.....

e. G-4:

(1) Obtains from a study of the administrative and tactical situation and orders, the following data:

(a) Probable extent of the pursuit.

(b) Nature of engineer equipment which will be required during and at end of pursuit, and what

labor will be necessary during each phase of the action.

(2) See also paragraph 16 e (1).

(3) Recommends to higher authority the advancement of refilling points, particularly the railhead, to meet the changing situation.

(4) Requests from higher authority the additional labor required by the changing situation.

(5) Prepares necessary administrative orders (usually data therefore [sic] is available from a previously prepared plan). See paragraph 16 e, (2) to (5) inclusive.

(6) Often meets the supply situation by recommending early release of field trains to join respective columns, the early displacement forward of animal elements of service trains, the attachment where necessary of elements of the service trains to columns, and the echelonment forward of supply, collection, and evacuation establishments, including distributing points.

(7) Considers the circulation required for the zone of advance.

22. LANDING ON HOSTILE SHORES. - The duties especially to be emphasized are:

.....

e. G-4:

(1) Before embarkation, obtains from a study of the situation and orders from higher headquarters the policies and the details of supply to be effective upon landing.

(2) Provides for early arrival at port of debarkation of representatives of G-4 and of each division technical, supply, and administrative staff officer having functions of supply and transportation.

(3) Provides for early arrival at port of debarkation of administrative troops.

(4) Upon debarkation, obtains from a study of the situation the data given in paragraph 16 e (1). When higher authority has not provided an organization for supply, organizes the supply system for the division with personnel and supplies of the division, together with the utilization of local resources in supplies and labor as authorized by the basic policy of the expedition.

(5) Prepares the administrative plan. Prepares and secures issue of the administrative order when the situation demands. See paragraph 16 e, (2) to (5) inclusive.

SECTION VI

COMBAT (DEFENSIVE)

	Paragraphs	Page
Defensive combat in general	23	64

Defense in a meeting engagement	24	68
Position defense	25	69
Defensive zone	26	70
Counterattack	27	72
Raids	28	73
Relief of a front line division	29	76
Withdrawal from action	30	80
Delaying action	31	83
Retirement	32	84
Defense of a river line	33	85
Defense of a coast line	34	88

23. DEFENSIVE COMBAT IN GENERAL. The following duties have general application to defensive combat:

e. G-4.

See paragraph 16 e.

24. DEFENSE IN A MEETING ENGAGEMENT. -- The duties to be emphasized in this situation are:

e. G-4:

(1) See paragraph 16 e.

(2) With respect to circulation, prepares circulation map only when traffic conditions make this necessary.

25. POSITION DEFENSE. -- The duties to be emphasized in this situation are:

e. G-4.

(1) See paragraph 16 b [e].

(2) In addition, recommends and secures approval concerning the following:

(a) Accumulation of supplies in the sector, particularly ammunition and engineer fortification material.

(b) Limits of daylight and night traffic and use of lights on vehicles at night.

(c) Feeding and clothing prisoners of war and civilian population.

(3) When the enemy's fire makes it desirable, recommends the movement of combat trains to locations of service companies.

26. DEFENSIVE ZONE. (Division as part of a corps) -- The duties to be emphasized in this situation are:

e. G-4: See paragraph 25 e.

27. COUNTERATTACK. -- The duties to be emphasized in this situation are:

.....
 e. G-4. Continues normal supervision of transportation, supply, and evacuation, unless situation changes sufficiently to make paragraph 19 e applicable.

28. RAIDS. There is no fixed procedure in the initiation of a raid. Assuming that the division commander orders a brigade to make an important supported raid for a special object, the following data are applicable:

.....
 e. G-4: Makes provision for special equipment and supplies required for training the raiding party.

29. RELIEF OF A FRONT LINE DIVISION. -- The duties especially to be emphasized in this situation with respect to the ingoing division are:

.....
 e. G-4:
 (1) Obtains data with respect to the situation as given in paragraph 20 e (1).
 (2) In addition, secures approval of the mutual arrangements made by the two divisions that facilitate supply during relief.

 (3) See paragraph 20 e, (2) to (5) inclusive.

 (4) With respect to administrative details which fall under his jurisdiction in the sector, avoids making any but most imperative changes until after the completion of the relief.

 (5) With respect to supplies in the area available for the relieving division, insures that the administrative order covers the subject of disposition of such trench and area stores as are in the sector.

 (6) With respect to special assignment of transportation for movement into the sector, insures arrangements required for:

 (a) Various headquarters.

 (b) Advance parties.

 (c) Quartering parties.

30. WITHDRAWAL FROM ACTION. -- The duties to be emphasized in this situation are:

.....
 e. G-4:
 (1) Obtains from orders received from higher authority and a study of the administrative and tactical situation the following data:

 (a) Nature and extent of the withdrawal from action.

 (b) Assistance from outside sources available for transportation, evacuation, and traffic

control.

(c) See also paragraph 16 e (1).

(2) With respect to refilling points, recommends locations suitable for the various stages of withdrawal.

(3) Submits and secures approval of a plan for the grouping and control of trains, the early movement to the rear of train elements and establishments, and the use of division reserve supplies.

(4) Prepares necessary administrative orders (usually data therefor is available from a previously prepared plan). See paragraph 16 e, (2) to (5) inclusive. These orders are especially explicit with respect to:

(a) Restrictions on daylight movements.

(b) Responsibility for destruction of stores.

31. DELA. NG ACTION (in successive positions). The duties to be emphasized in this situation are:

.....

e. G-4: See paragraph 30 e.

32. RETIREMENT. The duties to be emphasized in this situation are:

.....

e. G-4: See paragraph 30 e.

33. DEFENSE OF A RIVER LINE. -- There are two methods of defense of a river line from the defenders side of the river; the defense "at the river bank", which has many of the characteristics of a passive defense, and the defense "back from the river line", which resembles an active defense in some respects. The duties to be emphasized are:

.....

e. G-4: See paragraph 16 e.

34. DEFENSE OF A COAST LINE.

Note: The defense of a coast line is in principle the same as the defense of a river line. The duties to be emphasized are:

.....

e. G-4: See paragraph 16 e.

APPENDIX B: G4 ADMINISTRATIVE ORDERS FORMAT

Source: U.S., War Department, Field Service Regulations: United States Army, 1923 (Washington: U.S. Government Printing Office, 1924), pp. 164-165.

Date and hour

No _____) To accompany Field Orders No _____.
)

1. SUPPLY.

- 173

e. Engineer.

- (1) Refilling point or points and description of material. (With organizations to be served at each.)
- (2) Distributing point or points, when needed.
- (3) Special instructions to tool wagons, when necessary.

Note: Similar subparagraphs pertaining to other supplies, such as ordnance, signal, medical, quartermaster, and air service are added when necessary.

2. EVACUATION.

a. Casualties.

- (1) Men.
 - (a) Collecting station or stations.
 - (b) Hospital station or stations.
- (2) Animals.
 - (a) Collecting station or stations.
 - (b) Special instructions of interest to the command.
- (3) Refer to Annex No _____, Medical Plan, when issued.

b. Burial. (Instructions as to cemeteries and burials.)

c. Salvage. (Collection and evacuation.)

d. Captured material. (Disposition and reports.)

e. Prisoners of war. (Collecting points, cages and inclosures, disposition.)

3. TRAFFIC.

a. Circulation.

- (1) Refer to Annex No _____, Circulation Map, when issued.
- (2) Restrictions. (Assignment and use of reserved roads, limits as to time, daylight traffic, and special routes for ammunition and ambulances.)
- (3) Control.
 - (a) Instruction to provost marshal relative to police arrangements on roads.
 - (b) Schedule of traffic priority including barrier line.
 - (c) Disabled vehicles.
 - (d) Distance between vehicles or groups of vehicles or men.

Note: Other pertinent paragraphs may be added.

b. Construction and maintenance of routes.

- (1) Roads and bridges.
- (2) Direction signs. (Instructions other than routine.)
- (3) Refer to Annex No _____, Engineer Plan (other than tactical), when issued.

c. Rear boundary. (When required.)

4. TRAINS.

a. Service.

- (1) Special instructions as to location and movement.
- (2) Special assignment or release.

b. Field.

(1) Instructions relative to location, formation in column or other movements.

(2) Location of bivouacs, when required.

c. Combat. Same as b when separated from organizations for purpose of traffic control.

5. PERSONNEL.

a. Stragglers. (Location of straggler line and collecting points.)

b. Surplus baggage. (Disposition; usually refers to packs and equipment.)

c. Mail.

d. Shelter. (Instructions for quartering parties.)

e. Rear echelon of headquarters. (Location of, when required.)

6. MISCELLANEOUS.

Any administrative matters not otherwise covered.

By Command of Major General _____

Chief of Staff

Official:

Assistant Chief of Staff, G-4.

Annexes:

Distribution:

1. All formal field orders which make changes in the administration or supply situation should be accompanied by administrative orders. The orders, however, should include only the necessary changes, referring to previous administrative orders in force for other details, or stating, in the "miscellaneous" paragraph. "Other administrative details: no change."

APPENDIX C: G4 JOURNAL FORMAT

Source: The General Service Schools, Manuscript for Training Regulations No. 550-10: Note Book for General Staff Officers with Combatant Troops (Fort Leavenworth, Kans.: The General Service Schools Press, 1924), p. 268. (Mimeographed.)

FORM FOR (G-1 B-1 R-1 Bn-1)
(G-2 B-2 R-2 Bn-2)
(G-3 B-3 R-3 Bn-3) JOURNAL
(G-4 B-4 R-4 Bn-4)

From _____ (date and hour) _____ (Unit)
To _____ (date and hour) _____ (date)

[illegible]

- (1) Refers to time of receipt or sending in this office.
- (2) Refers to time information was sent and thus calls attention to age of information.
- (3) The journal is the "daybook" of the section or unit. It contains briefs of important written and verbal messages received and sent, and notations of periodic reports, orders and similar matters that pertain directly to the section. Copies of messages and other data pertaining to one section and furnished by it for purposes of information of other sections are not entered in the journals of the latter. If the item be received or issued in verbal form, the entry herein is detailed; if in document form, the entry may be a notation referring to a file or a brief synopsis of contents.

APPENDIX D: PERIODIC REPORT FORMAT

Source: The General Service Schools, Manuscript for Training Regulations No. 550-10: Note Book for General Staff Officers with Combatant Troops (Fort Leavenworth, Kans.: The General Service Schools Press, 1924), pp. 270 and 275-276. (Mimeographed.)

FORM FOR G-4, B-4, R-4, Bn-4 PERIODIC REPORT

_____ REPORT (1)

From: _____ (date and hour)

To: _____ (date and hour)

_____ (Unit)

_____ (date)

No _____

Maps: _____

1. LOCATION C. TECHNICAL AND ADMINISTRATIVE TROOPS, TRAINS, RAILHEAD AND ESTABLISHMENTS.

(Changes during and locations at close of period.)

2. STATUS OF SUPPLY.

(Including losses of material and possibilities of resupply).

a. Rations; garrison, field, reserve, trench.

b. Munitions situation report; caliber, type, fuses, expenditures, receipts, and balance. For division and larger units, reduce to days of fire. Credits at depots and when it can be received in unit.

c. Equipment.

d. Other supplies.

3. STATUS OF EVACUATION.

(By whom made and progress of).

4. CONDITION OF ROADS AND STATUS OF CIRCULATION.

5. SALVAGE AND BURIAL.

(Amounts, kinds, re-issues and evacuations of salvage; burials by whom and where).

6. ACTIVITIES.

(Should cover those of section and technical and administrative staff, other than routine, namely those of particularly important or unusual nature.)

(authentication by chief of section)

Note:

(1) Same as on G-1 Report.

[(1) Submitted as ordered by the commander.]

[To be supported by such maps and appendices as are necessary to make a complete record of the existing situation and of the operations during the period.]

[Separate or independent units not provided with a staff corresponding to the four general staff sections submit one report based on the topical headings of the four section reports.]

[(2) When a marked change has occurred in any organization, this fact will be noted.]

APPENDIX E: DUTIES OF DIVISION G4 IN 1940

Source: U.S., War Department, Staff Officers' Field Manual: The Staff and Combat Orders, FM 101-5 (Washington: U.S. Government Printing Office, 1940), pp. 15-16.

DUTIES OF DIVISION G4 IN 1940

- (1) Procurement, storage, and distribution of all supplies including animals. (Coordination with G3 for priority of allocation of supplies.)
- (2) Location of supply, evacuation, and maintenance establishments.
- (3) Transportation of supplies by land, air, and water.
- (4) Construction and maintenance of roads and trails, docks, and airdromes.
- (5) Maintenance of equipment. (Coordination with G-3 for priorities.)
- (6) Recommendations for allocation of small arms ammunition and antitank mines. (Coordination with G-3.)
- (7) Traffic control . . . (Coordination with G-3 for tactical plan and secrecy.)
- (8) Construction, operation, and maintenance of utilities and other facilities relating to supply, shelter, transportation, and hospitalization, but exclusive of fortifications.
- (9) Evacuation and hospitalization of men and animals.
- (10) Assignment and movement of supply, medical, technical, and labor troops not employed as combat troops. (Coordination with G-3 to avoid conflict with tactical movements.)
- (11) Salvage.
- (12) Collection and disposition of captured supplies, equipment, and animals. (Coordination with G-2 for examination of materiel.)
- (13) Recommendations concerning protection of lines of communication and rear establishments. (Coordination with G-3.)
- (14) Recommendation as to location of rear boundaries.
- (15) Recommendation as to location of rear echelon of headquarters. (Coordination with G-1.)
- (16) Property responsibility.
- (17) Funds and priority of expenditure.
- (18) Construction, operation, and maintenance of military railways.
- (19) Operation of inland waterways.
- (20) Recommendations as to new types of equipment. (Coordination with G-3.)
- (21) Procurement of real estate, shelter, and facilities, including their leasing, repair maintenance, and disposition.
- (22) Acquisition and improvement of airplane bases.

(23) Preparation, authentication, and distribution of administrative orders, both fragmentary and complete . . .
(Coordination with G-3 for details of tactical plan; G-1 for details pertaining to the activities supervised by the personnel section.)

APPENDIX F: STANDING OPERATING PROCEDURE[S]
(TRIANGULAR DIVISION)

Source: The Command and General Staff School, 1st Special Class, 1940-1941, Vol. I: Misc (Fort Leavenworth, Kans., College Library), "School Memorandum No. 13," pp. 1-13.

STANDING OPERATING PROCEDURE[S]
(TRIANGULAR DIVISION)

SECTION I: General

1. APPLICATION.--All units except as modified by order.
2. UNIT PROCEDURE.--Subordinate units develop SOPs in accordance with policies outlined herein.
3. TACTICAL GROUPINGS.--Combat teams, attachments, and division troops. (Division troops included Division Artillery (-), Engineer Battalion (-), Medical Battalion (-), Quartermaster Battalion (-), Military Police Company, and Signal Company.

SECTION II: Command, Staff, and Liaison

4. ORDERS.--Issued by the Division Commander to regiments and separate tactical components; by the G3 to combat units; and by the G4 to administrative and supply units.
5. DIVISION HEADQUARTERS.--Forward echelon: G2, G3, G4 (or assistants), Headquarters Commandant, Signal Officer, Liaison Officer, and other enlisted personnel. Rear Echelon: remainder of staff.
6. SIGNAL COMMUNICATIONS.--Maintained in accordance with signal operation instructions (SOI). Radio nets operate as prescribed by SOI. Wire: One circuit per combat team command post; two circuits to division artillery command post.

7. LIAISON.--Established by G3 with combat units, by supporting units with supported units, and laterally between adjacent units.

SECTION III: Intelligence

8. GENERAL.--Warning alert of approach of enemy troops.

9. INFORMATION OF THE ENEMY.--Strength, composition, disposition, etc.

10. SPECIAL REPORTS.--Activity of hostile aircraft, location of obstacles and demolitions, and use of chemicals by enemy.

11. PRISONERS AND DOCUMENTS.--Search of prisoners by battalions limited to matters of tactical importance. Evaluated to Division. Uncovered situation maps, orders, etc. sent to Division Headquarters.

12. PERIODIC REPORTS.--Daily by Division, each combat team, and separate combat units.

13. COUNTERINTELLIGENCE.--Conceal Division movements from enemy air and ground observation. Secret and confidential documents NOT to be taken into frontlines. Only name, rank, and serial number to be given if captured.

SECTION IV: Movement

14. GENERAL.--SOP applicable only to Division movements using organic vehicles. Movement to be in four groupings (three combat teams and Division troops (less the

Quartermaster and Medical Battalions, which are to move in accordance with instructions issued by the G4).

15. MARCHING AND MOTOR MOUNT.--Foot troops halt 10 min ea hour. Motor columns will be two types: Closed--minimum distance consistent with speed; Open--open column, e.g., 200 yards or as specified by Division. When not specified, closed column will be used. Speed for motor columns: 30 MPH (day or night with lights; 15 MPH at night without lights).

16. SHUTTLE MOUNTS.--All personnel move by vehicle. This is the normal mount method when enemy contact is remote.

17. CHANGE OF DIRECTION OR OBJECTIVE.--Units prepare for posting of guides. Assembly areas or change of direction points will be pointed out to guides.

SECTION V: Development for Combat

18. GENERAL.--The Division may be committed to combat either from the march or assembly area.

19. DEVELOPMENT.--From the march: Units proceed to assigned positions without passing through assembly areas. From assembly areas: When time permits, units use dispersed formations when departing assembly areas. On arrival of Division Troops (DT) in assembly position, all included units are released to their organic commanders.

SECTION VI: Combat

20. GENERAL.--During the process of developing, orders are issued for the contemplated operation; signal communications and command posts are established, traffic control is organized, ammunition refill progress and evacuation are initiated.

21. FIELD ARTILLERY SUPPORT.--Light battalions are in direct support. Medium battalion (less the antitank battery) is in general support. Antitank battery is in readiness at a road net center; maintains liaison w/DW CP and has road priority at all times.

SECTION VII
Administration

	Paragraph
Supply, general	22
Ammunition supply	23
Class I supply	24
Class III supply	25
Motor maintenance	26
Ordnance maintenance	27
Evacuation	28
Traffic control and circulation	29

22. SUPPLY, GENERAL.--Within subordinate units all transportation, except prime movers, weapon carriers, and special purpose non-cargo-carrying vehicles, may be utilized as a pool to obtain the maximum flexibility and hauling capacity for that unit. Motor vehicles from the 1st Quartermaster Battalion [Company] may be attached to units for specific periods when the haulage task exceeds the capacity of organic unit transportation.

23. AMMUNITION SUPPLY.--

a. Hauling ammunition.--Regimental and separate unit commanders are responsible for hauling ammunition from ammunition supply points to their troops, using organic transportation.

b. Credits.--Unit commanders will be allotted credits of ammunition at a designated ammunition supply point. A representative of the division ordnance officer will be stationed at the division ammunition control point or ammunition supply points to check and report on calls against each unit's credits. The division ammunition control point will be established by the division ordnance officer on the main supply route.

c. Dumps.--Unit commanders will establish battalion and regimental dumps at locations convenient to consuming units and announce the quantity of ammunition to be dumped.

d. Trucks dispatched to the ammunition supply point or ammunition control point will be provided by the unit munitions officer with a written list of the quantity, caliber, and type of ammunition to be obtained. This is the only requisition required.

24. CLASS I SUPPLY.--

a. Rations.--Rations will be issued daily in regimental lots to unit transportation at the supply point according to a time schedule announced by the division headquarters (railhead distribution). Sorting and supervising distribution at the supply point are performed by the division quartermaster service. The ration cycle begins with supper.

b. Water.--

(1) When the water supply point is within easy hauling distance, units will obtain water with their own transportation. When the water supply point is far from the kitchen locations, empty containers will be sent by each unit to a division water distributing point established by the division quartermaster, where they will be exchanged for full containers. The division water distributing points are resupplied by transportation from the 1st Quartermaster Battalion [Company].

(2) All drinking and cooking water not drawn from the supply point or from a source approved by the surgeon will be chlorinated by the using unit.

25. CLASS III SUPPLY.--Gasoline and oil.--

a. Reserve.--Each vehicle except motorcycles will carry a reserve of ten gallons of gasoline and one quart of oil in containers.

b. Resupply.--Trucks engaged in hauling supplies from supply points will refill their tanks and containers at gasoline and oil distributing points established by army (detached corps) on main supply routes to or at supply points for other supplies. Vehicles remaining in forward

areas will be resupplied by exchanging empty containers for full ones brought forward from gasoline and oil distributing points by regimental transportation.

27. ORDNANCE MAINTENANCE.--

a. Maintenance of ordnance materiel is initiated by each unit with the tools and spare parts available. Where the means or time available to a unit are inadequate to repair damaged materiel, or materiel out of action, such materiel is reported by the unit concerned to the division ordnance officer, who will accomplish repair or replacement through Army ordnance.

b. A maintenance party consisting of a sergeant and two specialists from the division ordnance section and an emergency repair truck is attached to each combat team on the march.

28. EVACUATION.--

a. Sick and wounded.--

(1) On the march.--Evacuation will be made by the collecting company of the combat team.

(2) In combat.--

(a) Unit commanders (regiments, battalions, or similar units) are responsible for the initial treatment, collection, and evacuation of the casualties of their units to unit aid stations.

(b) The medical battalion is responsible for gaining and maintaining contact with aid stations and evacuating their casualties.

(c) The command post of the medical battalion is established at the site of the clearing station nearest the division command post.

b. Prisoners.--The capturing unit is responsible for the delivery of prisoners to the collecting station.

29. TRAFFIC CONTROL AND CIRCULATION.--

a. Main supply road.--One or more main supply roads are designated by division. Such designation is a directive to the engineers to mark and maintain the route and to the military police to regulate and guide traffic thereon. Unit commanders are responsible for selecting routes and guiding transportation between their combat or bivouac areas and the main supply road(s).

b. At night supply vehicles move in close column, without lights. . . . During daylight they move in open column at 150 yards. . . .

BIBLIOGRAPHY

BIBLIOGRAPHY

Public Documents

Field Manuals

U.S. War Department. Field Service Regulations: Administration, FM 100-10. Washington: U.S. Government Printing Office, 1943.

_____. Field Service Regulations: Operations (Tentative) FM 100-5. Washington: U.S. Government Printing Office, 1939.

_____. Staff Officers' Field Manual: Organization, Technical and Logistical Data, FM 101-10. Washington: U.S. Government Printing Office, 1943.

_____. Staff Officers' Field Manual: Organization, Technical, and Logistical Data, FM 101-10. Washington: U.S. Government Printing Office, 1941.

_____. Staff Officers' Field Manual. Part I: Staff Data. Washington: U.S. Government Printing Office, 1932.

_____. Staff Officers' Field Manual: The Staff and Combat Orders, FM 101-5. Washington: U.S. Government Printing Office, 1940.

_____. Staff Officers' Field Manual: United States Army. Chap. I: Staff Principles and Functions. Washington: U.S. Government Printing Office, 1928.

Tables of Organization and Equipment

U.S. Department of the Army. Infantry Division, TOE 7. Washington: U.S. Government Printing Office, 1943.

U.S. War Department. Headquarters, Airborne Division, TOE 71-1T. With Changes No. 1 and 2 (1945). Washington: U.S. Government Printing Office, 1944.

_____. Headquarters, Armored Division, TOE 17-1. Washington: U S Government Printing Office, 1945.

_____. Headquarters, Infantry Division, TOE 7-1. Washington: U S. Government Printing Office, 1945.

_____. Tables of Organization: 1933. A collection of tables of organization for the period 1921 through 1935. Fort Leavenworth, Kans., College Library.

_____. Table of Organization, Series A. Washington: U.S. Government Printing Office, 1918.

_____. Table of Organization 2W, 27 April 1921. Washington: U.S. Government Printing Office, 1921.

_____. Tables of Organization: United States Army. Washington: U.S. Government Printing Office, 1919.

_____. Tables of Organization: United States Army. Washington: U.S. Government Printing Office, 1917.

Others

U.S. Department of the Army, Historical Division. Organization of Ground Combat Troops. Washington: U.S. Government Printing Office, 1947.

_____. United States Army in the World War, 1917-1919. Vol. I: Organization of the American Expeditionary Forces; Vol. XIV: Reports of Commander-In-Chief, A.E.F., Staff Sections and Services; and Vol. XVI: General Orders, G.H.Q., A.E.F. Washington: U.S. Government Printing Office, 1948.

U.S. Statutes at Large. Vol. XXXII.

U.S. War Department. Field Service Regulations: United States Army, 1923. Washington: U.S. Government Printing Office, 1924.

- _____. "Report of the Field Service Test of the Proposed Infantry Division." Washington: Army War College, 1937. (Mimeographed; [U.S. Army War College Library File 94-20 (ONLY)].)
- _____. Staff Manual: United States Army. Washington: U.S. Government Printing Office, 1917.

Books

- Hittle, J. D., Lieutenant Colonel, USMC. The Military Staff: Its History and Development. Rev. ed. Harrisburg, Pa.: The Military Service Publishing Co., 1949.
- Huston, James A., Maj, USA. Airborne Operations: Chapters I through IX. Washington: Office of the Chief of Military History [1959]. (Mimeographed; Fort Leavenworth, Kans., College Library.)
- The Quartermaster Corps School. Operations of the Quartermaster Corps, U.S. Army During the World War. ("Notes on Army, Corps and Division Quartermaster Activities in the American Expeditionary Forces--France," Monograph No. 9.) Philadelphia: Schuylkill Arsenal, 1929.

Articles and Periodicals

- Chapla, B. C., Lt Col, Inf. "Infantry in Mountain Operations," Military Review, XXVII, No. 12 (March 1948), 14-20.
- Connolly, D. H. "What and Why Is a General Staff," The Military Engineer, XIII, No. 69 (May-June 1921), 222-229.
- "Duties of a Division G-4," Infantry School Quarterly, XXXII, No. 1 (January 1948), 124-142.
- McGee, Joseph B., Maj, USA. "Combat Observations of an Infantry Division G-4," Military Review, XXV, No. 12 (March 1946), 34-38.

, Unpublished Materials

Addis, Captain Emmett, USA. "Relations of the General Staff Sections With the Army Service," Lecture on staff duties given at The Army Service Schools, The General Staff School, Academic Year 1919-20, contained in The General Service Schools' Printed Pamphlets: 1919-20. Fort Leavenworth, Kans., College Library.

American Expeditionary Forces, General Headquarters. Report of Superior Board on Organization and Tactics, 19 April 1919. Washington: General Headquarters, American Expeditionary Forces, 1919. (Mimeographed.)

American Expeditionary Forces, Headquarters. General Order No. 14. 15 July 1917.

Army Ground Forces. "Lessons of the Bougainville [Solomon Islands] Campaign." Washington: Headquarters Army Ground Forces [1944]. (Mimeographed; Fort Leavenworth, Kans., College Library.)

_____. "SOP of a U. S. Infantry Division [1st Infantry Division]." Washington: Headquarters, Army Ground Forces, 1944. Fort Leavenworth, Kans., College Library.

Bundel, Lt Col C. M., USA. "Estimate of the Situation," Lecture given at The Army Service Schools, The General Staff School, Academic Year 1919-20, contained in The General Service Schools' Printed Pamphlets: 1919-20. Fort Leavenworth, Kans., College Library.

41st Infantry Division. Adm O 4 To Accompany FO 9. APO 41: Headquarters 41st Infantry Division, 1945. Fort Leavenworth, Kans., College Library.

101st Airborne Division, Headquarters. "Admin Order No. 6 (31 Jan 1945), Administrative Orders [1945]. Fort Leavenworth, Kans., College Library.

_____. "Admin Order No. 5 (29 Jan 1945) with Changes 7 (17 Feb 1945)," Administrative Orders [1945]. Fort Leavenworth, Kans., College Library.

Peterson, Charles C., Lt Col, GSC. G-4 History: European Theater of Operations. St. Severin, Belgium: Headquarters 2d Armored Division, 1944.

Proposed Infantry Division, Headquarters. "Ammunitions Supply System for New Infantry Division Test," Memorandum #1. Washington: Army War College, 1937. U.S. Army War College Library File 94-20 (ONLY).

Revelle, George H., Jr., Maj, Inf. "Under Fifth Army a Division G-4 Operates," Trials and Tribulations of an Army G4. APO 777: Headquarters, 15th Army Group (OVHD), 1944. Fort Leavenworth, Kans., College Library.

77th Infantry Division. "Fragmentary Admin Order No. 7," Administrative Orders: Leyte. Valencia, Leyte, P. I.: 77th Infantry Division, 1944. Fort Leavenworth, Kansas, College Library.

The Command and General Staff School. Combat Orders (Tentative). Fort Leavenworth, Kans.: The Command and General Staff School Press, 1936.

_____. Command and Staff Principles (Tentative). Fort Leavenworth, Kans.: The Command and General Staff School Press, 1937.

_____. 11th G. S. Course, Nov. 1942 - Jan. 1943. Vol. II: Sch. No. 12 to 52. Fort Leavenworth, Kans., College Library.

_____. 1st Special Class, 1940-1941. Vol. I: Misc; and Vol. V: Sch. 35 - 52. Fort Leavenworth, Kans.: College Library.

_____. 19th General Staff Class: Infantry Course. Fort Leavenworth, Kans., College Library, 1944.

_____. Regular Course, 1939-1940, G-4. Vol. XVII: Fourth Section Directives; and Vol. XVIII. Fort Leavenworth, Kans., College Library.

_____. Regular Course 1937-1938: G-4 [and] G-5 Course, Tactics & Technique of Separate Arms. Fort Leavenworth, Kans., College Library.

_____. 6th S. S. Course, June-Aug. 1943. Vol. II: Sch. 517 to Sch. 560. Fort Leavenworth, Kans., College Library.

_____. 16th G. S. Course, Nov. 1943 - Jan. 1944. Vol. III: Sch. 63 to 83. Fort Leavenworth, Kans., College Library.

_____. Tables of Organization. Fort Leavenworth, Kans.: The Command and General Staff School Press, 1938.

The General Service School. Military Organization of the United States. Fort Leavenworth, Kans.: The General Service School Press, 1924.

The General Service Schools. Combat Orders. Fort Leavenworth, Kans.: The General Service Schools Press, 1922.

_____. Command, Staff and Logistics, A Tentative Text. Fort Leavenworth, Kans.: The General Service Schools Press, 1929.

_____. Command, Staff, and Logistics. Vols. I and II. Rev. ed. Fort Leavenworth, Kans.: The General Service Schools Press, 1925.

_____. Command, Staff and Logistics. Vols. I and II. Fort Leavenworth, Kans.: The General Service Schools Press, 1923.

_____. Command, Staff and Tactics. Special ed. Fort Leavenworth, Kans.: The General Service Schools Press, 1923.

_____. Manuscript for Training Regulations No. 550-10: Note Book for General Staff Officers with Combatant Troops. Fort Leavenworth, Kans.: The General Service Schools Press, 1924. (Mimeographed.)

_____. Tables of Organization: Infantry and Cavalry Divisions. Rev. ed. Fort Leavenworth, Kans.: The General Service Schools Press, 1925.

_____. School of the Line. 1920-21 Course in Divisional Logistics. Fort Leavenworth, Kans., College Library.

37th Infantry Division. Report After Action: Operations of the 37th Infantry Division, Luzon, P. I., 1 November 1944 to 30 June 1945 (M-1 Operation). APO 37, San Francisco: Headquarters 37th Infantry Division, 1945. Fort Leavenworth, Kans., College Library.

U.S. American Expeditionary Forces, Army General Staff College. Organization, Administration and Miscellaneous: A.E.F. Mimeographed collection of manuscripts and lesson plans. Fort Leavenworth, Kans., College Library.

U.S. Army Command and General Staff College. Staff Organization and Procedures, ST 101-5-1. Fort Leavenworth, Kans.: The Command and General Staff College, 1964.